EDUCATION,

DEVOTED TO THE SCIENCE, ART, PHILOSOPHY, AND LITERATURE OF EDUCATION.

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EVOLUTION AND EDUCATION.

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I.

EVERY intelligent observer must be impressed with the activity of the educational thought of the day, and at the same time he must feel the need of some universally acknowledged principle to give something like order and definiteness to the confused conceptions now prevailing, of some accepted standard by which to estimate the value of the questions we are forced to consider. There are at present almost no principles not called in question by some one school of educators or another, and, what is more serious, for without them we can hope for no true educational science, there seems to be no conception that there is a way in which definite, decisive conclusions can be reached. Yet there is a way, and just one way. History and the laws of human development which it reveals can alone help us here, and it is because educational history is so constantly neglected that no unanimity is attained. As long as we fix our attention entirely upon the present, which as thus regarded is but one phase of human development, or even as is usually the case, upon one aspect of our many-sided present, confusion must continue to obtain, and no funda mental principles can be arrived at. What is needed, then, above all things else in the consideration of educational questions, is the careful study of the philosophy of human history and the vigorous adherence to the laws of human evolution, to ascertain more

precisely than has yet been done in what human progress really consists and by what means it has been accomplished, and to keep our educational institutions in full accord with the real spirit of humanity, and in direct line with the laws of its development.

The question thus open to us is much too broad for a single paper. But some of the teachings of history are so important and yet so obvious that they will well repay a little careful consideration. The purpose of the present paper is, then, to indicate the general nature of such historical study by inquiring into the nature of human progress and the laws of human evolution, and the general bearing of these laws upon the development of the individual.

In the opening sentences of that essay entitled "Progress, Its Law and Cause," Mr. Herbert Spencer tells us that "The current conception" [viz.: of Progress] is somewhat shifting and indefinite, and after telling us in some *fine* sentences what that conception is, he adds that it is both vague and positively erroneous. "It takes in not so much the reality of progress as its accompaniments, not so much the substance as the shadow." So he proceeds to give and illustrate the true definition. "It is settled beyond dispute that organic progress consists in a change from the homogeneous to the heterogeneous." "Social Progress is supposed to consist in the produce of a greater quantity and variety of the articles required to satisfy men's wants; in the increasing security of person and property; in widening freedom of action; whereas, rightly understood, social progress consists in those changes of structure in the social organism which have entailed these consequences." But somehow this definition seems hardly more satisfactory or profound than the one criticised. The two classes of changes which Mr. Spencer notes do not seem to flow the one from the other; but they really seem coördinate and both seem to come from some deeper source than he has designated. So in truth they do. True progress does not consist in these taken alone, but does consist in changes in the character of the social being, in the constantly progressing development of human nature; and of this development they are at once the manifestation and realization. Both classes of the changes Mr. Spencer indicates are but the realization in outward form of human capacities, and they serve to show how man is constantly becoming more fully conscious of his true nature as a rational being.

The difference of view thus developed is really more profound than is at first apparent, and consists not so much in the view of human progress as in the conception of human nature. As to understand this difference will help us in our present inquiry let us pursue it a little farther.

According to the school of thought which Mr. Spencer especially illustrates, man has been brought to his present stage of development by the operation of two so-called forces, chance-variation and natural selection. We do not now need to discuss the operation of these "forces"; all we need to note is that they are purely impersonal, act in a purely mechanical way, and are entirely external to the developing being. That is, man, like every other living creature, is purely the product of the external mechanical forces playing upon him. Here then is the reason why Mr. Spencer cannot accept the view of progress expressed above. Man has no intrinsic nature of his own. What he is he has been made by external agencies. The social organism with its ever increasing heterogeneity is not the outward expression of human nature, for that nature is the product of this organism. Man is made what he is by his natural and social environment.

This conclusion really expresses the ordinary scientific view of the nature of all things. Science looks upon everything as the product of something else, and this in turn of something, and so on forever, and thus regards the world's history as the product of the interaction of mechanical forces. But it is important to note that this view not only takes the heart out of everything, but especially fails to posit any evolution. For it can assign no origin to its forces; there is nothing from which they can be derived and moreover nothing to be evolved. No matter how long we conceive the present forces to have been in operation, until some other conception has been introduced their presence cannot be accounted for and the word is unexplained and unexplainable. But more inadequate and even pernicious is such a view of evolution when applied to human development. For at most it can grasp but half the truth, and so everything must appear distorted and unreal. For whatever else man may be he is certainly rational and self-conscious, and even if his physical development could be thus accounted for, the spiritual conceptions which he puts into nature and which the evolutionist purposely sets aside are themselves as much in need of explanation as the processes the ordinary view comprehends and professes to explain.

Now the conception of human nature is fundamental, not only for evolution, but also for education, for in either case the view we entertain must flow directly from it. As to education we shall see later; but for our view of evolution, though we cannot now stop further to examine the grounds, we must hold fast to the conception that man is not the mere creature of circumstances, but has an intrinsic nature of his own, the unfolding of which constitutes the process of his evolution. Human development then has been brought about by forces working from within; it is a part of the essential nature of humanity to be constantly progressing; progress is an essential element of its idea. While it may not be and indeed is not entirely independent of external influences, it nevertheless is not made what it is by these, cannot be regarded as the mere forming and shaping which their action through long ages has produced, as the effect of which they are the cause; but on the contrary it always reacts upon them in its own characteristic way, and in that reaction both manifests itself and accomplishes its own fuller development. It is through its own action not through the action of something else, that human nature has developed. Thus the conception of humanity is the conception of something above the mere laws of cause and effect, of something self-causing, self-producing, of something the activity of which is its own self realization. From such a conception human evolution has been the reaction through all the ages of man's existence of the inherent forces of his own nature, and through that reaction the slow unfolding of that nature. Humanity, that is, has always been potentially the same, but in the past much less fully realized than at present, and the process which history records is the process by which human potentiality has slowly been made real, and made real through the inherent laws of humanity itself. Having thus our preliminary conception of human nature, which will acquire somewhat greater fulness as we proceed, and of the corresponding nature of human evolution, let us now inquire into the laws in accordance with which this evolution has proceeded, and first of evolution in general.

"Every one is familiar," says Professor Joseph Leconte, "with the main facts connected with the development of an egg. We all know that it begins as a microscopic germ cell, then grows into an egg, then organizes into a chick, and finally grows into a cock; and the whole process follows some general well recognized law.

Now this process is evolution. It is the type of all evolution." Thus evolution is (I) continuous progressive change, (II) according to a certain law.[1] The law of this change, which Professor Leconte illustrates by the three series of "stages" or forms found in the development of the animal kingdom, was really formulated by Meckel early in the present century. The original form of all organisms is one and the same, and out of this one form all, the lowest as well as the highest, are developed in such a manner that the latter pass through the permanent forms of the former as transitory stages." But it should be remembered that the transitory stages passed through are really confined to the class and that the resemblances are always general. This Haeckel calls the fundamental law of evolution, and briefly it is "The history of the germ is an epitome of the History of Descent."[2] Or in general, "Each stage in evolution is an epitome of all that have preceded," and the law is indeed but a necessary consequence of the law of continuity.

Thus the completed law of physical evolution has two aspects, or phases, or parts, each of which really implies the other. Evolution means (I) Continuous progressive change, and (II) Its method is purely *Historical.* Each stage is an epitome of all the past. The individual passes in a general way through the various stages by which the race has reached its present condition, realizes in himself the universal features in the development of the race.

Such is the law of physical evolution. But the question we are more interested in answering is whether man's intellectual or spiritual growth has followed the same law. That thought itself has had a history no one will deny. But would that history, if written out in full, reveal its slow development, step by step, from its earliest feeble beginnings to the great achievements of the present? And were this so, could we say that its progress is by the *historical* method, that any given stage in its development is an epitome of those that have gone before, sums up in itself the history of all preceding stages? The history of thought as we are accustomed to read it would seem to lead to exactly opposite conclusions. For we are accustomed to associate the advancement of thought with the personal achievements of the world's great thinkers, and so its development, instead of being by steady accre-

[1] See Pop. Sci. Month. Oct. 1887.
[2] Evol. of man. I., p. 6.

tions from generation to generation, as the laws of evolution would require, would depend upon the chance appearance of men of genius, and be irregular and often capricious. Moreover, if we are to believe in the ordinary histories, or trust to the brilliant generalizations of certain modern thinkers, each stage of thought always stands in direct opposition to the previous one, and nothing presents so melancholy a spectacle as the history of human thinkers. Notwithstanding that the great thinkers of all ages have been the world's choicest spirits, they have invariably wasted their lives, we are told, in the vain search for what can never be found. This each one has seen as regards the work of his predecessors. It has seemed as if each felt that his own greatness could be shown only by destroying all that had already been done, that it could rise only from the ruins which it must first bring about. Thus it results that each new epoch of thought does not rise legitimately and naturally out of the preceding, but its beginning marks the destruction of all that has gone before, for all the systems of thought that were ever built up have been in turn refuted. But this is only to say that the history of philosophy shows us that there never has been any philosophy; the history of thought, that thought itself has been an abject failure. The conceit of modern science gives especial emphasis to this view of philosophic history, and in the light of its achievements, we are told, all previous thinking is now obsolete, and so must be neglected. We must henceforth build upon the foundations we are at present laying.

But such a view of the growth of thought contradicts the very conception of evolution, and so must be rejected. If thought has had a growth at all, it has been by the very same processes that have marked all evolution. It has advanced by slow, continuous progress, and each new development has risen naturally and necessarily out of the preceding one. In this natural development the past has never been destroyed, but has found a higher being in each new present. It is only from the past that the future can arise. No advance can be made until the ground already won has been fully traversed; and so new knowledge must always start from the old, which it must take up into itself and reform into its higher conceptions. The various systems of philosophy that have arisen have had a perfectly natural growth, and possess their importance, not as the achievements of surpassing genius,

but as the legitimate manifestation of the thought and spirit of the age in which they were produced. They have been the products, not of men working singly, but of peoples in their organic development. The greatest achievement of any thinker is to give adequate expression to the thought that has grown up about him, the as yet unuttered and unconscious thought, it may be, of his age or his people. He at most is but the organ through which the "spirit of his time" seeks its expression. Moreover each system is organically connected with other systems, grows naturally from those that precede it. It has been truly said that no great system of philosophy was ever refuted; its truth has only been absorbed in some higher and completer system, and so given a new form and fuller meaning. Thus each stage in the history of human thought is really an epitome of all the past, and can be understood only by comprehending that past. It is what it is only through the past; it has taken up into itself all that has gone before and by virtue of that alone is its true character determined.

For reasons that will be more apparent later, it is of the first importance from the point of view of education that the truly organic nature of thought development be fully comprehended, and Greek development furnishes us a good illustration of its continuous growth. Greek thought reached its culmination with the work of Aristotle, and it is evident enough that in his philosophy we have the completed result of the labors of the Socratic School. The articulate system of thought as it there appears is not the work of Aristotle alone but the joint product of Aristotle, Plato, and Socrates. But what is the relation of this system to earlier Greek thought? Is it that of opposition? Was its result to refute all that previous philosophers thought they had established? On the contrary, in many of the Platonic Dialogues the very effort is to give to each of the conclusions of several of his predecessors its proper place in the system of thought as a whole, to show how, though seemingly isolated or contradictory, these conclusions really supplemented each other, and thus to give to them a fuller meaning than ever they had before. Aristotle but completed the work which Plato began; and if we will study carefully the whole history of Greek Philosophy and note the results obtained by each successive school of thought, and then turn to the Philosophy of Aristotle and Plato, we shall find that every conception formerly attained has been taken carefully into ac-

count, had been wrought into higher form at their hands. We shall find that Parmenides and Zeno, and even the first-born of Greek philosophers, Thales, still live in their writings, and speak to us from their pages with a deeper significance than ever appears from their own.

At first such a conclusion may seem absurd. Take for a single illustration the teaching of Thales that the principle of all things is water. The absurdity of this we, with all the later Greeks, readily recognize, and for those who see as the outcome of Thales' efforts only this conclusion, certainly Thales was soon refuted and his labors have no further value. But in fact, however he embodied it, or however imperfectly he comprehended its real import, Thales grasped a great principle, the great and underlying principles of Aristotle, as of all philosophy, a principle the effort to give expression to which constitutes the very essence of philosophy, and which must therefore live as long as man thinks, viz.: that there is an underlying Unity from which all things have proceeded and to which they must be traced. And if we penetrate beneath the surface and seek the hidden meaning in the work of all Thales' successors, we shall find that meaning as vital to philosophy today as when it was first discovered. The absurdity lies, then, not in the conclusions of early thinkers, for they builded better than they knew, but in the statement which our own time alone could give birth to, "that no Metaphysical (meaning by that Philosophical) system has had in it a principle of vitality; none has succeeded in establishing itself because none has deserved to succeed." [1]

From this conception of the growth of human thought, it comprehends, or rather constitutes, the spiritual development of the race, and it has had a growth as really organic as that of any individual organism in the animal kingdom, one that is thus fully in accord with what we have seen to be the laws of evolution. Or in other words we may conclude that the spiritual development of the race as a whole fully conforms to our fundamental laws. Let us now turn to inquire as to the development of the individual.

[1] G. H. Laury's Biog. Hist. of Phil. p. 5.

Keep your pen from lenders' books, and defy the foul fiend.

— SHAKESPEARE.

SOME HINTS UPON THE SCIENCE AND ART OF TEACHING.

BY REV. JOHN M. RICHARDSON, TEXAS.

ANECDOTE, ART, SCIENCE, ILLUSTRATION, CAUTIONS.

AMONG the slaves of my father in "the good old days" of indigo culture in South Carolina, was, according to family traditions, a native African who claimed to have been a "chief" or "prince" in his wild home-land. He was a man of good carriage and appearance, of excellent disposition, close observation, fine perceptive powers, and quick intelligence. Readily responding to kind treatment, he soon picked up a little barbarous English, made himself useful, showed eagerness to learn, became devoted to his then young master, and, after due probation, he was appointed foreman of the indigo-vats. Almost immediately thereafter his master's indigo began to command a considerable premium in the market, — bringing a much higher price than that of his neighbors, who therefore supposed that my father had discovered some new and better process for preparing the drug for sale.

Finally, after the "prince" had been foreman for two or three or more years, several of my father's fellow-planters called to see him one season just before their indigo crop was ripe, to ask the secret of his manufacture.

"I have none," was the reply. "If there is any, it is my foreman's. He has exclusive charge, and is now actively at work preparing my crop for market."

"At work!" they exclaimed. "Why, our crops are not yet ripe! Suppose we visit your fields and vats, and inspect his process."

"Agreed," responded my father.

Mounting their horses, visitors and host rode through the plantation to the indigo works.

"Your crop does n't seem to be any riper than mine," said one. "I have n't cut a single plant."

Arriving at the vats, all hands were found busily engaged, the foreman everywhere inspecting, directing, showing what and how

to do. Answering his master's call, the "prince" promptly came forward, saluting politely by removing his conical and close-fitting "huckled" woolen cap, bowing and scraping the ground with the right foot.

"We want you to show us how you make such good indigo," said my father. "Please tell me and these gentlemen all about it."

A gratified smile played over the face of the African as he replied in his usual loud though respectful tone, — "Beshow', meshow'!"

This was given in a sing-song manner, and meant, — "To be sure I will show you."

Calling two of the hands, he and they took their reap-hooks and strode off into the field, followed by their white pupils, who had dismounted and given their horses to attendant grooms.

Carefully studying the ripening crop, the foreman soon stopped, pointed out a small "patch," cut an armful and, holding it up, cried out, —

"Wenshúm luxó, cut," — "When you see it look like this, cut it."

The white gentlemen, cultured planters of the day, looked with all their eyes, but they saw no difference between the portion indicated and the rest of the crop; to them it all "looked so."

The foreman and his assistants soon reaped the part selected, carried the plants to the works, deposited the same in wooden mortars and began to bruise them with pestles, also of wood, into a uniform pulpy mass. As the contents of his mortar approached the pulpy state, the foreman would occasionally pick up a handful and carefully examine it. At last he stopped, laid aside his pestle and holding up some of the pulp, intoned as before, —

"Wenshúm luxó, stop," — "When you see it look like this, stop bruising it"; but to the eyes of his class it all "looked so."

Satisfying himself as to the state of the contents of the other mortars, the foreman ordered all the pulp just beaten to be thrown into a designated vat; and going to others in which the bruised plant was already steeping, he would dip his hand into the colored water, throw up a portion of the liquid between his eye and the sun and carefully study its shades and play of colors. Stopping at one, he repeated that action several times as if to call special attention to its color, and again came his sing-song formula, —

"Wenshúm luxó, draw," — "When you see it look like this,

draw it off for evaporation." To the observers it all "looked so," and they went away no wiser than they came. The ignorant savage — ignorant as to books, to scientific details and explanations, but gifted and cultured as to natural senses and observation, perception and experience — knew exactly, by developed intuition, at what stage of maturity to cut the plant, to what degree to bruise it, and when it was sufficiently steeped, in order to secure the best results. He had acquired a body of truth, by the aid of whose principles and methods, he produced his remarkable results; but, unfortunately, the record could be read by no other eye than his, for neither master nor any assistant or observer ever acquired his knowledge and skill, his success in the art. He could not make known his discoveries to others; they perished with him.

There may, then, be very great success in the practice of an art, and yet a marked absence of what we call scientific knowledge on the part of the artist. There is nothing surprising in this; for even among the highly educated there are very varying degrees of skill and success in the different callings and professions of enlightened society. Every painter has "to mix his paints with his own brains"; the most learned physician finds it impossible to impart all the secrets of perfect diagnosis; few lawyers can read all the signs of conviction, conversion, and agreement, or their opposites, in the features and persons of a jury; not every teacher is able to detect the wave of intelligence as it passes over the face of the pupil; rare are the preachers who know exactly when and how far to press a given point.

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Tanning is an art, a systematic application of certain processes, mechanical and chemical, to the evolution from given materials of a well-known product; it is an application of what is now called chemical science. In like manner farming is an old art, yet founded, as we say, upon the modern science of agriculture; and teaching is an art based upon education as a science. Now, whilst the arts mentioned were successfully practised long before their respective sciences received careful elaboration and explicit statement or explanation, yet must their practice have been based upon correct, although, perhaps, not clearly perceived or understood, laws; and there are today, no doubt, many practical tanners, farmers, and teachers, successful in the highest possible degree, who find themselves unable to give any clear, satisfactory, or strictly

scientific account and exposition of the means and principles by whose aid and application their great achievements have been wrought. Natural gifts, improved by zeal and experience, often work results which no amount of scientific attainment can, without them, accomplish.

Many "professionals" have a wonderful gift of the "gab," but very little else. They can talk *ad libitum et ad infinitum* on any subject whatever; and yet, when they are through, their ideas are as the Shakespearean "Three grains of wheat to a bushel of chaff." "Language," said a distinguished French politician, "has been given to us to conceal our thoughts"; but much of the so-called scientific language of the day seems to be used for no other purpose than to conceal the absence of thought — to hide ignorance under an imposing mask of wise-sounding words in order to impose upon the multitude. Especially is this true in the present rather chaotic state of the science of education, in which much that is claimed to be new is not true, and the most that is true is not new. The man who "knows it all" on any subject, is not always the man who knows the most about it. There is charlatanism in teaching as well as in medicine. Sir William Hamilton used to tell his classes that the first requisite for a student's success in any department of research is to be convinced in his own mind that he is a mere fool, in this, that however great his knowledge of a given subject, the whole mass known is as nothing compared to what remains unknown.

Art — and often in its very highest perfection — very generally precedes science; for, and very fortunately for us, truth, as such, does not depend upon our recognition of its existence, upon our means of discovery, upon our understanding it; though science, which is "knowledge reduced to a system," is dependent upon (1) discovery, (2) orderly exposition and utilization. America, to illustrate, existed as really before as after its discovery by Columbus, though its existence was not realized and utilized by European nations until the Great Discoverer had shown them how to reach its coasts; and though the Greeks had discovered all the fundamental properties of the Conic sections, the utility of the science was not fully realized, except as a means of mental training, before it was found out that the planets move in ellipses. This last example may, indeed, be regarded as a case, and the only one, perhaps, in which science preceded its art; for modern

astronomy, as an art, could not well exist, or have originated, without a knowledge of the abstract theory or science of the Conic sections. He, however, who would practise any art, should — to be successful in it, to advance it, to excel in it — make himself as familiar as possible with all the known principles of the science or sciences upon which said art depends. Education, then, as a science, is of an importance which cannot be overestimated; for when fully developed the art of teaching may become more intelligently directed by the body of teachers, especially in the economy of time and resources and the adaptation of means and methods to the ends and products in view. The history of our race may offer no grounds to hope that the best minds of the future will ever excel those of the past; but surely the general level and attainments of the average mind can be greatly elevated — and will be just as soon as "the line of least resistance" has been ascertained and the best means of elevation have become familiar to the "master mechanics" or "artist workers."

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The science of medicine and surgery is concerned about the growth, development, structure, decay, injury and repair, disease and cure, and healthy longevity of the human body, in order that the same may be preserved in active usefulness up to the last moment that it is occupied by the in-dwelling spirit. It seeks to find the best way to clothe the body, the most wholesome foods; it studies diseases, their causes, courses, and cures; — all to keep the body, as a living machine, in its most efficient state.

The science of education is concerned about the nature of the material to be operated upon, the manner of operation and the matter to be used; it investigates the structure of the mind, its laws of development, the best available food for normal growth, the matter, principles, and methods of imparting instruction at the different stages of mind development and growth, and digests the whole into systematic and orderly statement for the use and guidance of the artist, who may not be a scientist.

The art of teaching is the process of skilfully applying those principles and methods in the use of the best means so as to evolve the product aimed at, the development or elevation of each pupil to his highest possible state of active usefulness and happiness.

How is the art of teaching to be learned? Just like any other: (1) observing the principles upon which it is founded; (2) fol-

lowing the methods by which others have succeeded; (3) improving, if possible, upon those methods by originating other and better ones.

Why do the painter and sculptor go to Italy? To pore over the methods and best products of the great masters, just as Pythagoras went to Egypt to study the art of teaching, and Cicero to Athens to master rhetoric and oratory.

Why do surgeons and physicians frequent hospitals? To observe the best methods of surgical operations, and of curing disease.

How does the apprentice in any art learn? By observing and imitating his master, and striving to do better than his instructor. The teacher in any art who does not turn out workmen better grounded than he was, is not doing his full duty; for how can the world advance unless each generation improves upon the former, the son upon his father, the apprentice upon his master?

Every art is a process, a mode of orderly procedure, a progression, guided by principles and aimed at some well-defined product. The general method is the same in all; for method is nothing but a series of thoughts in action, well ordered to discover an unknown truth; and, when found, to make it known to others, or to use it for the benefit of mankind.

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Allow this illustration: —

What is tanning? A process whereby raw-hide is converted into leather. The steps are orderly, progressive, founded on principles or truths of experience, and aimed at the creation of a well-known product. The artist or tanner — every workman, whether in mind or matter, who loves his art, strives to improve it and seeks to excel in it, is an artist — the tanner should (1) have a good practical knowledge of both the raw material and the finished product, (2) know how to carry the given material through the successive steps of transformation, (3) be in possession of all the necessary means and appliances, and (4) know how to use them to the best advantage. These are the steps: —

a. The hide is soaked in water to loosen any adhering flesh or fat left by the butcher.

b. It is then "beamed," that is, placed upon a semi-cylindrical table and scraped with a properly shaped knife so as to remove the flesh or fat without injuring the skin.

c. Next, it is steeped in lime-water to loosen hair and cuticle.

d. Once more is it "beamed" to remove cuticle and hair.

e. Again is it soaked in water to remove any lime whose presence in the pores would render the leather harsh and brittle.

f. Now it is placed in a weak solution of tannin whose strength is gradually increased until, by the union of the tannin and the gelatine, the skin is entirely changed, through and through, into leather.

g. If the leather is to be rendered water-proof, it is, after being smoothed and dried, then curried or its pores filled with oil; and it may at the same time be colored.

Experience, knowledge of principles and methods, possession of and skill in the use of means and appliances, and close observation, are essential to the success of the tanner — and equally necessary are they to the teacher.

The hide should never be made tired or sick, or worthless, or become worn out, by the treatment at any stage of the process, but each step should best prepare it for the next — so, too, in the schoolroom as well as in the tannery.

All art is more or less imitative. There should be, however, no mere blind, servile imitation, but an intelligent study and practice of the best methods as guides or means, with the determination to make the best use of them, to originate, if possible, better ones. There are but six elementary mechanical powers — reducible, perhaps, to three — and Noah understood, no doubt, their simple application as well as any mechanic who has lived since his time, and yet almost innumerable are the useful modern machines resulting from the intelligent combination, machines of which Noah (or Watt even) never dreamed.

Art is, also, progressive, continually tending toward perfection, which, however, as an asymptote, it can never reach. Science, when thoroughly elaborated, is that asymptote; so that methods however good, or art however skilful, cannot dispense with the thoroughly scientific elaboration of professional principles, though it must always be remembered that as there is more in the farmer than in farming, so there is more in the teacher than in teaching as a mere code of rules and methods. Ever since "Adam delved and Eve span," it is the zealous, observant, and intelligent artist-workman who has added to the world's wealth of knowledge and resources.

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To the foregoing illustration must be added the following cautions: —

1. Hide, or leather, is dull, brute, unintelligent matter, incapable of either coöperating with the tanner or resisting his manipulations; yet must not the artist violate any of the laws of its being so as to neutralize, change, or destroy the chemical or other affinities existing between its particles of matter or ultimate atoms, but all his processes must be in general harmony with those laws so as to utilize them for the accomplishment of his purpose — the creation of a newer, more useful, higher order of material.

On the other hand, the material upon which the teacher operates — human nature, affection, intelligence, capacity, will — is able either to coöperate with the master-workman, so as to become a ready, delighted, intelligent, and improving coworker with him, or to resist his efforts and thwart them all. The teacher should labor to secure that coöperation, to win over that resistance, to avoid all repulsion.

2. The pupil is not merely some thing to be transformed; he is to be instructed, developed, tested, trained, guided, encouraged, inspired, and strengthened to go by himself; he is a living, growing, responsible creature, capable of great and good things or their opposite, in which, however, his teacher may plant, so to speak, germs of thought and feeling, aspiration and inspiration, which may leaven and regenerate the whole being by its own spontaneous activity. He should be caused to feel (1) that he is not to be dragged along, willy-nilly, by his foretop, back-lock, or any other hand-hold, in spite of himself, or scourged up the hill of learning and usefulness; (2) that he is not so much undergoing instruction as taking the most active and important part in it; (3) that he is his teacher's most reliable and efficacious helper in all that teacher's efforts for the pupil's own advancement.

So taught, the pupil will indeed be a ready, happy, and ever-improving helper to his teacher; and so teaching, the teacher will surely find his "yoke become easy, his burden grow light."

Such a teacher may never have heard of Froebel and Pestalozzi, or of the greater teachers that preceded or have followed them; he may never have read Rousseau's Emile or the Confessions of the vile author; he may not be able to write an essay on Comenius, his life and works, or to give, in regular order or otherwise, "Gregory's Seven Laws of Teaching"; his tongue may

be innocent of the trick-stock cant and professional phraseology with which too many normal schools stuff the mouths of their pupils whilst leaving their heads and hearts entirely empty; nevertheless, if he so works in the fear and love of God and for the good of his race, he will be a great teacher, a blessing to his charge and community.

3. Let no self-taught teacher — all who succeed are self-made so far as man is concerned — let no self-taught teacher suppose for one moment that the writer intends to disparage professional schools, training, books, science. But there may be charlatan teachers whose only science is humbug, and there may be humbug-teaching schools. Not every teacher has had or will have the privilege of attending a professional school, but no one should lose an opportunity to get professional training, to grow in professional knowledge and attainments; and to know the great teachers, personally or through their works, is to gain aspiration and inspiration. Ponder the teachings of the wise, but do not follow them blindly. "Prove all things and hold fast that which is good"; studying most closely — in the light of God's three great Bibles, Nature, Revelation, and Providence in History — the character and life-laws of the being to be developed and inspired rather than merely moulded by the art of the teacher. Above all, let us teachers be ourselves true men and women, worthy guides of the young, striving to make our charges, as so many talents committed to our care, the double and more in all skill, excellence, and usefulness of ourselves. "Who would make men, must be himself a man."

WHATEVER lacks purpose is evil; a pool without pebbles breeds slime;
Not any one step hath *chance* fashioned, on the infinite stairway of time;
Nor ever came good without labor, in toil or in science or art;
It must be wrought out through the muscles, born of the soul and the heart.
Whatever is strong with a purpose, in humbleness woven, soul-pure,
Is known to the Master of singers; He touches it, saying, "Endure!"

— C. J. O'MALLEY.

THE TEACHING OF MATHEMATICS.[1]

VI.

A CONSISTENT PLAN FOR THE TEACHING OF ALGEBRA INDUCTIVELY.

BY GEORGE WILLIAM EVANS, ENGLISH HIGH SCHOOL, BOSTON.

IN a previous article the writer tried to show historical warrant for the practice of introducing algebra by means of problems, and as essentially a system of abbreviations. It is evident that the method there indicated cannot be carried very far without a study of elementary algebraic forms. Accordingly we find, as in Sherwin's Algebra, so familiar to New England students of ten or twenty years ago, or in the more recent textbook called the Franklin Algebra, that our method is pursued only far enough to furnish an introduction more or less extended, after which the old-fashioned order of development is pretty closely followed. It is obvious that such a plan lacks consistency, and certain practical difficulties will suggest themselves. In taking up *ab initio* the study of formal algebra after some little time spent upon problems, the pupil is apt to feel either that he has been wasting his time and is now just beginning the work of the year, or that he has a pretty clear idea of what algebra is for, and that this study of forms will be of little application therein. Further, we have here still a little of the leaven of unrighteousness, inasmuch as an extensive and logically complete theory of forms is made to introduce certain very simple and limited applications of it. There is no reason why the method followed in the case of simple equations should not be continued to quadratic and simultaneous equations. No textbook, so far as I know, has yet been constructed on this plan, and the natural conservatism of school methods will long withhold it from us. But it seems difficult to believe that a method which promises a tolerably rounded and complete introduction, which prepares the way for intelligent continuation of the study, and which takes advantage of the instinct of curiosity

[1] Copyright, 1888, by Eastern Educational Bureau.

in presenting new conceptions, can long have its introduction delayed.

At the point we have now reached with our class of fourteen-year-olds, it is necessary, as we have said, to make a study of elementary algebraic forms; but only incidentally, and with a view to its direct bearing on the solution of equations. We treat only the simpler cases of the four operations $+$, $-$, $\times$ and $\div$, somewhat as indicated in the Franklin algebra, pp. 15 and 31, but with an extension to binomials. Certain important types of products (see Todhunter's Algebra, § 53) must be memorized. With the knowledge thus gained we may successfully handle equations involving multiplication,[1] and afterwards the successive difficulties of fractional equations.[2] Merely fanciful complications such as could not occur in the solution of problems ordinarily given are to be excluded. The knowledge of product-types will be especially useful in the equations containing fractions. They will, indeed, be useful wherever there is any factoring to be done; and one of the most important applications of factoring is to be found in the solution of quadratic equations. This method of solution requires the statement of the following axiom: —

The product of any number of factors cannot be zero, unless one of those factors be zero.

The introduction of factoring as a *fundamental* method for the solution of quadratic and higher equations is believed to be new to the elementary teaching of this subject, although of course it has been incidentally brought out in many of the best textbooks.[3] It is usually regarded, however, as a device belonging to the theory of equations, and not admissible in an elementary textbook. For example, this seems to be Todhunter's view. Yet the matter is so simple as to be readily understood and entered into with zest by the average pupil. It furnishes a continuation of the subject of equations with one unknown quantity, and a thorough interpretation of multiple, coincident, and null solutions; matters which are much neglected under the present method of teaching. That is, for equations like $x^2 + 4 = 4x$, or $x^2 - 4x = 0$, the pupil ordinarily finds but a single solution, and does not see the continuity of these cases with the ordinary equation having two so-

[1] Wentworth's Elements of Algebra (1881), p. 61.
[2] Id. pp. 133 and 135.
[3] Franklin Algebra, pp. 203, 204; Wentworth, Elements (1881), p. 206; Wells's Academic Algebra, p. 248.

lutions. Further, the student rarely learns any reason but the teacher's dictum why equations of degree n should have n solutions. As to the method of solving quadratics by "completing the square," that is primarily a device for factoring, and should be exhibited as an auxiliary method for cases where simple inspection does not show the factors. As to the success of the method of factoring I may say that it has been tried for two years with pupils of the English High School of the average age of fourteen years who had been new to the study three months before; and they were found to be interested and capable of solving almost any equation[1] with commensurable roots, provided the coefficients were not too large (say all in the hundreds).

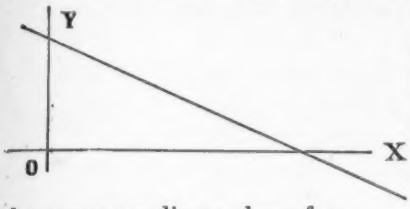
Generalization of problems may now be introduced,[2] together with the evaluation of formulæ: incidentally the formula for quadratic roots should be taught. We must limit ourselves, of course, to generalizations producing simple formulæ; otherwise we should be compelled to anticipate here an exhaustive study of formal algebra.

We pass next to the subject of elimination, with the remark that as the subject is usually presented the pupil sees so little of the real nature of the process through which he puts his equations, that it is only with the greatest effort that he can be induced to accept or to attempt to understand the meaning of the adjective simultaneous. The usual introduction presents the method of addition of equations,[3] which the student accepts only too readily, and acquires considerable skill in its manipulation. It is, however, rather difficult to get him to realize that this is the simplification of two independent restrictions on the numbers of the problem. I do not speak of the definitions and "explanations" usually given: they are not all that could be desired, even if always they gave rise to ideas in the mind of the pupil.

Elimination should be introduced by a brief treatment of indeterminate equations. The effect of implicit conditions that are not algebraic should be brought into view, and the pupil should be acquainted with problems, algebraically indeterminate, yet on account of such implicit conditions capable of definite solution. Problems could be obtained[4] admitting a finite list of answers, and

[1] E. g., all the examples on p. 219 of Wells's Academic Algebra are within their reach.
[2] Franklin Algebra, p. 127.
[3] Franklin Algebra, p. 142.
[4] Todhunter's, pp. 394–396.

for problems not so limited a substitute for an *infinite list* of answers is at hand in the algorithm of analytic geometry. Thus



a *complete* list of answers to the equation $2x+5y=205$ is the line figured in the diagram, each point representing by its distance from OY a value of x, and by its distance from O X the corresponding value of y.

Some hesitancy will be felt about adopting this illustration in a course of elementary algebra; but the most conservative teacher must admit that a man of affairs will have to study a graphic diagram twenty times where he has to solve an algebraic equation once; and such a diagram is no more exclusively the property of analytic geometry than is the use of the last letters of the alphabet for unknown quantities. Both sprang full-armed from the head of Descartes.

Of course when the idea of these lists of answers is established the pupil will be easily made to see that *the* answer to a pair of equations must appear in the lists of each equation; and the point common to the two lines in the graphic diagram is a tangible presentation of such an answer.

The graphical method furnishes a ready means of illustrating the correlation of multiple sets of answers, say in a pair of simultaneous quadratics. This matter has been very much neglected; in fact, college freshmen who attempt to obtain a complete set of answers to such a problem are rarer than pea-green swans.

The natural method of elimination is the method of substitution. The veriest beginner applies it in his earliest problems, when he constructs an expression for one unknown quantity in terms of the other. It comes very near to being a continuation of this method by one unknown quantity, and a man clings to the unique to save confusing himself. It is interesting to see the ingenuity with which, in one or two cases, Diophantus chases his problem, taking a fresh unknown quantity like a relay of horses, at each successive stage. Then the method of "comparison" as it is called, is little more than a technical variation of the method of substitution, and should not be dwelt upon with any stress. The method of addition possesses real merit, especially in equa-

tions of the first degree, where a sensible pupil will soon reject all other methods, and where on that account conscientious teachers are wont to dictate methods of elimination in order that the student may learn the full tale.

One reason for delaying the study of elimination is that the student may obtain a little more mental growth before he meets so difficult a subject. The danger is not that the difficulty will stop his progress, but that he will pass it unnoticed, and later, will be compelled to come back and root it out. For example, if we have a pair of simultaneous quadratics, each of which is factorable, they furnish a set of four equations of the first degree: four equations make six pairs; would each of these six pairs be simultaneous?[1] Obviously, those which comprised the factors of the respective quadratics would not be: yet they would satisfy definitions generally given.[2] Another reason is that under the plan here suggested, the subject of elimination would be presented as a whole, and the different methods applied each to its proper use at once. The three cases of elimination would then be: —

I. Each equation of first degree: method of addition.

II. One equation of first degree, the other quadratic: substitute in the quadratic the expression for x or y implied in the other equation.

III. Both equations quadratic: by (1) factoring one equation or by (2) combining both equations in some suitable way, we may be able to obtain equations of first degree; then proceed as in case II. But this case is in general impossible.

As an illustration of case III., we may take the pairs of equations: $2y^2 - 4xy + 3x^2 = 17$; $y^2 - x^2 = 16$. Dividing the first equation by the second and multiplying out, we obtain the homogeneous equation $65x^2 - 64xy + 15y^2 = 0$, from which $5x - 3y = 0$ and $13x - 5y = 0$. Substituting, say from the first of these, in the second equation, we obtain $x = 2$. As a homogeneous equation can always be factored, this method (equivalent to the more artificial $y = vx$ method) is applicable to all cases where *the unknown terms* of each equation given form a homogeneous expression.[3] If either of the given equations are homogeneous, that may

[1] A pair of equations of the kind described is: $x^2 + 2xy = 2x + 4y$; $2y^2 = 3xy + 5y$. These factor into $x = 2$; $x + 2y = 0$; $y = 0$; $2y - 3x = 5$; and the admissible answers are 2 and 0, 2 and 5 1-2, 0 and 0, -5-4 and 5-8.

[2] Franklin Algebra, p. 142.

[3] For a common misstatement on this point, see Bradbury's Elementary Algebra, § 184, p. 196. Cf. Todhunter, p. 198.

be factored at once; if both are homogeneous they must evidently be either inconsistent or identical, for they are then equivalent to a set of four equations of the form $x \div y =$ a constant. It is no inconsiderable advantage for the student to be familiarized with the theory and use of homogeneous equations.

The course herein recommended may be easily completed in one year. A second year should then be devoted to the study of formal algebra, including logarithms, but not *proportion* as distinct from the theory of fractions; the algebraic fraction is generally a ratio, and the fractional notation has the advantage of being a familiar instrument in the hands of the pupil. Inasmuch as there rests upon any innovator the burden of proving his project useful, I submit the following schedule of the subjects of study during the first year of algebra, with the object of showing that the development is systematic, symmetrical, and upon a consistent plan:—

First Year Course. — *A.* Tabulation of steps in demonstrative reasoning; algebra as an abbreviation system; simple problems and equations; absolute negative quantity. *B.* Equations and identities; the four operations; certain product-types; fractional and other equations of degree 1. *C.* Factorable equations; factoring quadratics by "completing the square"; quadratics with irrational and imaginary roots. *D.* Generalization of problems and evaluation of formulæ; formula for quadratic roots. *E.* Indeterminate equations; effect of non-algebraic conditions; finite and infinite lists of answers; elimination: Case I.; Case II.; Case III.

Second Year Course. — G. C. D. and L. C. M. of polynomials; Fractions; Proportion; Powers and Roots; Imaginaries; Logarithms; Binomial theorem.

"KNAVERY and flattery are blood relations."

"Force is all-conquering, but its victories are shortlived."

"Let us have faith that right makes might; and, in that faith, let us to the end dare to do our duty."

"With malice towards none, with charity for all, with firmness in the right as God gives us to see the right."

— ABRAHAM LINCOLN (1809–1865.)

THE TEACHING OF THE ENGLISH LANGUAGE AND LITERATURE.[1]

V.

AUTHOR AND LIBRARY WORK IN SCHOOLS.

BY SUPT. L. R. HALSEY, BATTLE CREEK, MICH.

THE importance of giving literary training in the public schools is coming more and more to be recognized. This healthful symptom is manifesting itself in different sections of the country, and it is indicative of a disposition to introduce practically in primary, grammar, and high schools what should be considered the most important work of the school. Very gratifying results are reported from different quarters as to the outcome of such application. One important element in this work is the use of entire masterpieces, so far as is possible, in the different grades; another is the introduction of special author exercises; a third, the use of library books in geography, history, and science work; a fourth, the direction of the general reading of the pupils. The writer has had some experience in work in these four lines in the schools of a city, and gives the results of his experience and observation that, if there be any merit in them, some suggestions may be made to those who are beginning this helpful work. The list of masterpieces used in the schools indicated above (the Battle Creek schools), was recently given in EDUCATION and in COMMON SCHOOL EDUCATION, and need not be repeated here.

The aim is to introduce the work in entire masterpieces as early as possible and to carry it out, so fully as may be practicable, to the end of the high school course. Obviously, the vocabulary-forming period, the primary and first reader age of the pupil, does not allow the introduction of reading material other than that which is designed to develop a starting vocabulary. A beginning may be made possibly in the second grade, certainly in the third, in simple entire classics, such as Æsop's Fables or Andersen's

[1] Copyright, 1888, by Eastern Educational Bureau.

Fairy Tales, or Scudder's Book of Folk-Stories. After such introduction the series may run through the primary, grammar, and high schools. As some variety each year may be desirable, and as the numbered readers give explanations and language helps, which the average teacher needs and the average school edition of an entire masterpiece does not afford, it is well to use the graded reader for several months each year, the supplementary classics taking their place for the remainder of the year. As a rule an entire classic should be read through without interruption. In classes in which there are two recitations in reading each day, a good plan is to use the numbered reader for one exercise, the entire masterpiece for the other. One of these exercises would better be in sight reading. Sight reading should be introduced all along the line. It is too much neglected. It should not, however, supplant the reading exercise for which preparation is made. It has worked well to have separate sets of masterpieces for sight reading. When the numbered readers are used, it is better in the grammar school to read consecutively the pieces of an author, making as full study of him and his writings as circumstances will allow, taking up in this way two or three authors during two or three months. This will carry the study along the line of the author work of which mention will shortly be made.

In the class hour, whatever may be the piece in hand, the object should be to work out practically the three purposes of the reading exercise. The first of them is to give the ability to grasp mentally, rapidly and accurately, the thought of the printed page. This is the most obvious purpose and gives the chief warrant for teaching reading in the schools. The second is to enable the pupil to reproduce the thought in oral rendering, to read aloud. This is practically the least important. Attention to it is necessary as, aside from other manifest advantages, it gives the best means of determining the ability of the pupil to read mentally. We shall have little to say of this in the present paper, yet we would not be understood as undervaluing it. In the earlier stages of school life it is practically more important than it is later. The third and highest purpose of the reading exercise, as we take it, is that which has to do with general literary culture, the development of the literary taste, and the acquisition of the power to read good books intelligently and appreciatively after schooldays are done. If this faculty shall have been acquired in school, we

care not so much as to the amount of work that has been done in the line studies. We would not yield to any one in our desire for a thorough and adequate study of the commonly accepted educational essentials. Yet the formation of a wise reading habit, is, next to the development of a worthy character, the highest thing a school may give its pupils. While not overlooking the first and second purposes of the reading exercises, — nay, while affirming their necessity to a proper attention to the third, — we shall throughout this paper have in mind especially the third purpose. That should dominate in the selection of books to be read, in the use to which they shall be put, in the methods of work in classroom and elsewhere.

The plan is to secure a full understanding of the thought of the author through exercises, for which (except in sight reading), there has been careful preparation in definition, synonyms, paraphrasing, reproducing, character and plot discussion; through memory exercises and lessons on the life and homes and surroundings and works (introduced gradually) of the author. These exercises should be oral and written. The written work may be done upon the blackboard, on loose sheets of paper or in language books. Much of it may be worked into the language hour. The character and extent of this work will depend upon the age and previous literary study of the pupils. Merits of style should not pass unnoticed in the higher grades of the lower schools. They should receive large attention in the high school. It is taken as granted that this literary work should enter into the programme for every year in every course in the high school. Too often the reading and literary exercises are cut out of the high school curriculum. The purpose is to give during the months in which an author is studied as good a knowledge as is possible of him, his character and work, his writings, their style and incidents. This may all be introduced so slowly and gradually that it will not be a burden. Even if a great deal of ground be not covered, the seeds will be planted for future literary growth. Pictures of authors and scenes, and, so far as is possible, all the works of the author which will interest the children, and books, and articles, and clippings about him and his writings will aid in encouraging pupils to read other books than the one in hand for class study. All through it should be borne in mind that allusions and references should be explained. The atlas, the dictionary, the cyclopædia,

should be used at every turn. The habit of investigating, of research, should be acquired.

Connected with the classroom literary work there may well be a series of special exercises, each devoted to the life and writings of some one author. These exercises may occur during school hours, occupying the whole or part of one session, or they may be extra evening exercises. Every effort should be put forward to decorate the room appropriately and to provide a varied and entertaining programme. Pictures upon the wall, books upon the desk, citations and stanzas upon the board, manila paper charts with sketches of the author's life and lists of his works will help along wonderfully. There should be singing, preferably — when it is possible — the words of the author whose life is under consideration, set to music. The programme may be made up of essays, blackboard sketches, reports, talks, recitations, readings, brief citations, tributes, anecdotes. The friends should be invited to be present. Such exercises may be carried out successfully, to the writer's knowledge, in grades from the third to the twelfth inclusive. The character of the parts and the amount of essay work will, of course, vary with different grades.

Much may be done in developing the reading habit through the constant use of library books and the better periodicals in connection with geography, history, science, and other school work. The books used for this purpose should be kept in the schoolroom long enough for the pupils to become acquainted with them. There is a double advantage in this. Not only are the pupils getting additional information about the subjects handled in the class work, thus doing more interesting and intelligent work; not only do they cultivate the habit of research, a very valuable thing in itself; they also get into the habit of handling, of using books. Something in pictures or in print will attract their attention so that they will wish to know more of the books they use, and of other books in the same or other fields. A great deal of this very effective work is now done in our schools. The amount is increasing. A large library, while it is a great help, is not an absolute necessity. A small number of well-selected books, properly handled, will give large returns. More depends upon the spirit of the teacher than upon the size of the library.

Such work as is indicated above should not be limited to the class lines. Advantage should be taken of every possible oppor-

tunity to call the attention of pupils to good books in different departments of literature, preferably — when it is possible — with the book before the pupils. Current history is frequently bringing up reminders of great events or men, for knowledge of which reference may be made to books that will interest young folks. These reminders should not be allowed to pass unimproved. An excellent part in the opening exercise would be a brief report on some work suitable for the child's reading, made by the teacher, or — better — by some pupil.

Arrangement should be made by which pupils of the grammar and high school grades may go to the school or city library periodically, one room at a time, under the leadership of some one who is familiar with juvenile and adult literature and acquainted with the contents of the library. An informal talk about books and their use, with mention of the better ones in different departments and the opportunity of handling and examining them, will do much good. There is something in getting the knowledge of books which "comes in at the finger-ends." Such an exercise as the above may well take the place of some half-hour class in the regular programme. The class may be taken to the library and forty or fifty books may be carried into the schoolroom. A general view of literature suitable for the grade may be had, with mention of a few titles in each group, or some one department, as history or geography, may be considered, with mention of a number of books under the one head. All this work must be under intelligent direction. Not a great deal can be accomplished unless the teacher has a knowledge of books for children as well as for adults, an appreciation of the good in literature, sympathy with children, tact and common sense. Unfortunately all teachers have not these characteristics of a successful director of juvenile reading.

A great help to children who desire to read good books may be afforded by lists prepared carefully for the different grades by some one familiar with children's books. These should embrace titles in all departments at all suitable for the grade. They should be duplicated by hektograph or cyclostyle, or some other copying process, and distributed among the pupils. Possibly some missionary work among parents too neglectful of their children's reading, as most parents are, may be done. In all these methods the teacher should let the pupils understand that they are urged

at all times to come to the teacher and talk about books they read, to report upon them orally and (at times) in writing, to get suggestions for future reading and encouragement in good work. Pupils should be urged to talk about their reading to each other, to their parents and other friends, so far as is practicable.

Another method of using library books in the schoolroom may be indicated. Forty or fifty worthy books for young folks are brought from the library and placed in the schoolroom. Here they are allowed to remain for some time. The volumes would better be from various departments of literature. The pupils understand that they may read the books in school — under certain restrictions. Of course there must be no neglect of the legitimate work of the school. The half-hour before each session may be utilized for this purpose. Pupils may be allowed to read during the session after they have prepared their lessons. Aside from any literary advantage this practice will lead some pupils to study more earnestly that they may have more time for reading. It will provide helpful employment for the bright pupils who, after getting their lessons, are inclined to be idle and mischievous. Here the teacher must be watchful. The allowance must not be abused. If a pupil reads when he should be preparing some lesson, he must be deprived of the privilege for a time. The method here proposed has been found by the writer to be a good one.

Two cautions are necessary. None but thoroughly good books should be recommended and the pupils should be encouraged to read slowly and carefully. A good book must be reliable, true to life, of good literary style and high moral tone. For young people interesting as well as profitable books must be chosen. It is better to read one book slowly, mastering it, than twenty imperfectly. In fact, unless the reading is carefully done its benefit is questionable. Teachers should endeavor to learn what books pupils read outside of school channels and to correct vicious tastes. This can be accomplished best through the agency of wholesome books.

If the library work is to be effective, there must be decided conviction on the part of the teacher that it is of the highest importance that this work should be attended to in the school, that there the deficiencies in home training should be made up so far as is possible, that one of the highest duties of the teacher lies in this channel. Teachers, fortunately, are coming more and more to this belief.

THE TEACHING OF THE CLASSICAL LANGUAGES.[1]

V.

ON THE ACCENT AND MEANING OF ARBUTUS.

BY PROF. W. S. SCARBOROUGH, LL. D., WILBERFORCE UNIVERSITY.

SHALL we say *ar'butus* or *arbu'tus?* Both Webster and Worcester, in the older editions, adopt the latter pronunciation. Professor Fisk P. Brewer, of Grinnell, Iowa, at the recent meeting of the American Philological Association, suggested that the accent should fall upon the first syllable, and he has abundant support for his theory. I remember no instance whatever among the classic writers in which the accent is placed upon the second syllable, but it is invariably upon the first.

Horace, Bk. I., Ode I, : —

> "Est qui nec veteris pocula Massici,
> Nec partem solido demere de die,
> Spernit, nunc viridi membra sub arbuto,
> Stratus, nunc ad aquæ lene caput sacræ."

> "*One puts not mellow Massic's cups away,*
> *Nor scorns to filch a part from solid day,*
> *His limbs now 'neath the green ar'butus spread,*
> *Now by some sacred water's gentle head.*"

The meter demands that the first syllable should be accented.

The verses quoted also make it quite evident that the meaning of the word is that of a tree, and *not the common Mayflower*, as popularly used; but a tree under whose lofty shade goats love to graze and idle men, like the happy-go-lucky fellows whom Horace describes delight to lie, that they may be protected from the scorching Italian suns.

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Virgil, G., II., 69: —

"*Inseritur vero ex fetu nucis arbutus horrida.*"

"*The rugged Arbutus is, forsooth, grafted with a scion of the nut tree.*"

Then again, Virgil, G., III., 300: —

"Post, hinc digressus, jubeo frondentia capris, Arbuta sufficere et fluvios praebere recentes."

"*Afterwards, departing from my subject, I ordered (the farmer) to give the goats the Arbutus branches, and supply them with fresh water.*"

Many similar examples occur in both the *Georgics* and the *Eclogues*, as well as in Horace and Pliny, from which the meaning and size of the arbutus tree may be quite accurately determined. In every instance the demands of the meter place the accent on the first syllable, and where the authority comes from for accenting the second *at any* time I am unable to say.

Ovid, Metam, X., 101 sq.: —

"Ornique et piceæ, pomoque onerata rubenti
Arbutus, et lentae (victoris praemia) palmæ,
Et succinta comas hirsutaque vertice pinus,
Grata deum metri."

"*The mountain-ash, the pitch pine, the arbutus laden with red ripe fruit, and the pliant palms — the reward of the victor, etc., are all agreeable to the mother of the gods.*"

Professors F. D. Allen, of Harvard University, and T. D. Seymour, of Yale, with other high philological authorities, adopt the same accentuation as Professor Brewer. Arbutus is kindred in meaning with *arbor*, a kind of tree that is very abundant in Italy. Professor Brewer defines it as a small tree or shrub, growing to the height of about twelve feet. In this instance I think the term *shrub* is inapplicable. Arbor alone may refer to an alder tree (*alnus*), fig tree (*ficus*), fir tree (*abies*), palm tree (*palma*), or the cypress tree (*cupressus*), but never so far as I know to the arbutus.

This species was also well known among the ancient Greeks as far back as the times of Aristophanes. For in his Birds he represents Pisthetærus as saying, —

"An olive tree, again, will be the temple of the august birds; and we shall not go to Delphi or to Ammon, and sacrifice these, but we will stand amid the *arbutus* and the wild olives with bar-

ley and wheat and pray to them, holding up our two hands, to grant us some share of blessings. And these shall immediately be ours, when we have thrown to them a little wheat."

We infer that the arbutus here spoken of is a tree and not a shrub as the prefix *arbor* implies, arb-utus. The ending — *atus* occurs with many words in the Latin language, and denotes what the thing has, its qualities or its characteristics. In like manner, the ending — *utus* is also used, e. g., *cornutus, horned; nasutus, large nosed, arbutus, having the properties of the arbor or tree.*

To say, then, that it means, or has at any time meant the common *Mayflower* as popularly known among us, is to have a wrong conception of its etymological relations and to give it a meaning that the ancients never thought of, and philologists will not accept. Lexicographers so far as they have not done so will doubtless correct the mistakes of the old dictionaries and give *arbutus* its proper accent and meaning. The Ericeæ, which contain a number of species, — trees and shrubs of various sizes, — constitute the order of which arbutus is a genus. The fruit is somewhat fleshy, with five cells, and is many seeded. The *Arbutus U'nedo* is found in Southern Europe, also in Asia and America. It grows to the height of twenty or thirty feet. The bark is rugged (*horrida*). The flowers are large; in color, a greenish white,

Another species is seen in the *Arbutus Andrachne*, found in Great Britain as an ornamental plant; though hardy, it is often killed by frosts. Among others may be mentioned the *Arbutus Integrifolia; Arbutus Furens; Arbutus Aculeata; Arbutus Uva Ursi*, sometimes called *Arctostaphylos Uva Ursi*, and the *Arctostaphylos Alpina* — all of which are more or less evergreen, and grow to heights varying from three to twenty feet. The fruit is sometimes eaten, as in the case of the *Arbutus Integrifolia*, in Greece and the Oriental countries. Very few species are found in this country; they are common to Europe and South America. The *Arbutus Aculeata*, which resembles our myrtle, is found on Staten Island, I believe, where it grows in unusual abundance. The species we find in America does not approach the great size or even the beauty of its European cousins, but it is more on the order of the *bush* — less stately and less attractive — sometimes a "large bush," so called.

SCHOOL RECORDS OF PHYSICAL CONDITIONS.

BY C. F. CREHORE, M. D.

[A plan for keeping a School Record of the mental and physical condition of each scholar at the date of his admission, and as developed during school life.]

IF teaching is to become a science, it is obviously important to study what may be termed the Natural History of the pupil, in order to properly adapt methods to his requirements and observe their results in practice. And once for all let it be here said that it is assumed that school education should not only develop the mental, but the physical qualities of the scholar.

To study the natural history of the pupil, a close observation of his various qualities and idiosyncrasies is of course essential, and a record of these observations becomes indispensable for the purpose of future reference and comparison. The following plan for keeping such a record is submitted, and some farther remarks upon its application will follow the description: —

It is proposed that in each school a record book should be kept, one page of which should be devoted to the description of each pupil.

At the top of the page his name should be written in full.

Two spaces should follow, separated by horizontal lines, numbered 1 and 2.

1. Containing a brief genealogy of the pupil, setting forth name; date of birth and nationality of parents; their condition; vocation and approximately their education and culture. This, if not to be directly ascertained, can be inferred from the conversation and character of the pupil. College degrees or other evidence of the education of the parents should be noted. It would be well to insert the nationality and race character of the grand-parents when readily accessible.

2. The place and date of birth of the pupil. A *general* description should follow, stating idiosyncrasies and details not provided for under succeeding headings. As this will be made once for all, it should be minute and full.

The resemblance of the pupil to father or mother should be noted, especially if these are of different races or divergent types.

In any case of atavism, it would be well to endeavor to get and insert a description of the ancestor whom the pupil resembles.

Below the above, four or five vertical columns should be ruled opposite the following titles — one for each year of the school course, divided by horizontal lines into the following: —

3. Height.
4. Weight.
5. Size and shape of head; an instrument like that used by hatters might be devised, and the diagrams obtained be transferred to the record.
6. Greatest circumference of chest.
7. Eyes. This should be filled from the examination made by an oculist, if possible, and include all peculiarities or defects of sight.
8. Hearing; acuteness, etc.; not essential, but worth noting.
9. Lengths of upper and lower limbs.
10. Some simple test of muscular strength.
11. Rank in games on playground, etc.

It is needless to observe that the test should be uniform for all pupils in all schools. Traits not liable to change — as color of hair, eyes, etc., might better be noted once for all in the general description (2).

12. Intellectual capacity.
13. Quickness of perception.
14. Retentiveness of memory.

Twelve, thirteen and fourteen are rather difficult matters to test as between schools, if made by the teachers. They will be more valuable as tests of progress or improvement from year to year under the same teacher (and examiner) than as a basis of comparison between different schools.

15. Moral capacity.
16. Behavior.

Fifteen and sixteen, like the three preceding, are not easy to refer to a fixed common standard. The "personal equation" of the teacher or examiner will affect them.

The most valuable records — from an ethnological standpoint — will be those of the primary and grammar schools. The high schools, presumably, will be filled with children of more than average mental capacity and their record will be rather that of a class, than of the average of children in a community. The

record should be made at the commencement of each school year, and in case of the transfer of a pupil to another school, a copy should be sent with him. It would be very desirable to supplement the record with brief accounts of the future career of each pupil, giving his vocation, etc., date of marriage, and any data in regard to his physical condition that would compare with the school observations.

These later records, furnished by the pupil, could be sent to the Board of Education, to which body it is contemplated that the school records should ultimately be sent. Some competent person should be employed to analyze them and collate the results. This seems a large work to undertake, but it is not more difficult, and is fully as important as that of classifying and collating the returns of industries, etc., collected by the census of the state and general government.

While the additional labor imposed upon the teacher would be considerable, it is believed that in time the benefits derived from it would more than repay them. With proper books and appliances for doing it systematically, it would be much simplified.

It might be found desirable to have the physical records made by medical experts, who, provided with suitable apparatus, could go from school to school, and by constant practice would attain great facility in the work. Photographs of the pupils would add much to the value of the record, and if taken under fixed conditions would furnish reliable data for comparison.

It seems needless to enumerate the obvious uses of this inquiry. The laws which govern physical and mental growth can only be deduced from some such observation. The influence of educational methods upon development can only be estimated in the broad way by some such form of inquiry. The influence of race type, of heredity upon our future citizens will be determined largely from these results.

But the main advantages of such systematic observation have been admirably presented to the readers of EDUCATION in an article printed in the number for September, 1886, entitled "An Anthropological Cabinet," from the pen of Prof. Guiseppe Sergi, of the University of Rome. The writer of the present article has added and can add nothing to what is therein said of the importance of the results to be attained, especially from an educational point of view.

TIMOTHY JONES,—Page 41.

1. Father.—Born in Ireland 1852. Paternal ancestors, Scotch and Irish; maternal, Spanish and Irish; gardener by trade; short, stout, reddish hair; had common school education.
Mother.—Born in England. Probably of English ancestry on both sides. Taught primary school before marriage. Is a slender, lively woman, fresh complexion, chestnut hair.

2. Timothy Jones, born in Boston, Oct. 7, 1877.
Entered school Sept. 1887.
Evidently a case of re-appearance of the Spanish type of one of his paternal great-grandfathers.

Is a slender, bright-eyed youth; black hair and eyes; complexion quite dark; talks clearly and rapidly, slight Irish brogue when excited; well nourished, and prompt in his movements.

	CONDITIONS.	1st YEAR.	2d YEAR.	3d YEAR.	4th YEAR	REMARKS.
3.	Height	49 in.	51^{2} in.			
4.	Weight	98 lbs.	104 lbs.			
5.	Dimensions of head	lon. tr. $6^{2} \times 5^{3}$ vert. 3^{1}	same.			(If possible, both horizontal and vertical outlines should be here inserted.)
6.	Chest, circum.	32 in.				
	Capacity spirometer	94 c. in.				
7.	Oculist's report upon visual organs					
8.	Acuteness of hearing					
9.	Length of arms					
	Length of legs					
10.	Muscular strength (dynanometer)					
11.	Rank in the playground					
12.	Intellectual capacity					Marked on scale 1-10.
13.	Quickness of perception					
14.	Memory					
15.	Moral capacity					
16.	Behaviour					

PREPARATION FOR CITIZENSHIP.

III.

AT SMITH COLLEGE.

BY PROF. J. B. CLARK.

IN a sense all studies are a preparation for citizenship. A man is worth more to the state for a knowledge of Latin, Greek, and Mathematics. He is better political material by reason of every disciplinary study that he pursues. A certain kind of training, however, develops primarily the political aptitudes of the student; it fits him, not merely for efficient personal work, but for the relations that one member of a body politic sustains to others. What does Smith College do in this specific direction?

The question suggests another, namely, for what kind of citizenship is this college preparing its pupils? A common though erroneous view identifies citizenship with suffrage. Are we aiming to fit pupils to vote intelligently? Is our training shaped by a contingency that may or may not happen? If the probabilities are against the extension of the suffrage to women in the near future, are we left without a reason for introducing into our curriculum a considerable number of political studies? If so, any account of these courses must take an apologetic tone. We must aim, not to show what amount of scientific politics we teach, but to prove that we are justified in teaching politics at all. It is certain that we are often forced to take this attitude; many persons are still mentally asking the question that was once put to me by a European scholar, with all the vehemence that broken English could give,—"What in the—say world—do you teach girls political economy for?"

There is, of course, a possibility that complete suffrage rights and duties may be extended to women. There is a probability that a partial suffrage will be extended to them. There is a moral certainty that crusades for public reforms will be conducted by them. Already they are the almoners of the country, and take the leading part in great charitable works. Aside, however, from

such specific modes of influence there is the overshadowing fact that women are a permanent and measureless force in the state. Vote or no vote, reform or no reform, they make their influence felt in every direction. In the great play of forces that goes on in the social organism, women give and receive. If they were merely passive, if their lives were helplessly dominated by the state, they would need to look upon it with some comprehension of its nature and working. As active agents they are in absolute need of such an intelligent outlook.

In one respect Political Science is an exceptional study; it cannot be dropped at the time of graduation. Whether she will or not, a woman of any intelligence is compelled to study politics more or less as long as she lives. In some cases it is less rather than more. Some lives are too much shut in to admit of much contact with the general life of the state; but in the case of no life that can be termed intellectual is such contact wanting. In the sense of a study of the nature and action of the social organism and its governing agency, Political Science is the life-long study of every one who thinks. In this comprehensive sense it exceeds most studies in importance by so wide an interval that it will hurt no one's feelings to make the comparison. What can a college do in starting such a course of study? What is Smith College in fact doing?

The course in History and Political Science in this college extends through ten terms of the course and occupies, on an average, two hours a week. Nearly a half of the work is required of all students, while the remainder is elective. To the whole of this course there is given a political cast; History is studied for the sake of the lessons that it teaches in the domain of politics. The number of hours that are devoted to the study of particular periods increases as the present era is approached, for the reason that recent periods afford more valuable political lessons. The highest value is placed on the History of the United States since the Revolution, and on that of European States since the beginning of the French Revolution. Lectures are given throughout the course; textbooks are used in connection with them in the earlier terms, while in the later ones greater reliance is placed on topical readings.

Instruction by reading courses exposes pupils and teachers to two opposite dangers. The topics may be very numerous and

detailed, and the readings accurately prescribed, by chapter and paragraph. This represses any tendency to independence on the part of the pupil. On the other hand the topics may be made very general, and the pupil may be turned loose in the library to browse at will. This is apt to lead to desultory reading. Both dangers may be avoided by selecting a few special topics of great interest, and giving to the reading such general direction as shall keep it within the limits of the subjects indicated. In Political Economy, for example, it is desirable that, after an elementary course in Distribution, pupils should make special studies of Wages, Interest, and Profits. If these topics be assigned early in the course, and if the pupil be informed in a general way where information concerning them is to be found, if these studies be made an integral part of the course, and if the results of them be tested by the final examination, then very fruitful and fairly independent work may be expected. Some of the best results thus far realized in this department at Smith College have come through this method.

Of the ten terms of study already referred to, as constituting the general course, one is in the first year, two in the second, three in the Junior, and the remaining four in the Senior. By the arrangement recently adopted, two terms are to be devoted to Political Economy, one to Political Science, one to the History of American Politics, and the remainder to European History, Ancient and Modern. Grecian History is studied in the first year, and Roman in the second, because of the aid which is thus afforded to the study of classical languages and literatures. The remaining portions of the historical course are so shaped as to lead directly toward the study of modern political movements.

The three terms directly devoted to Economic and Political Science are in the Senior year, and these are, by the present arrangement, to be supplemented by a certain elective work not included in the terms of classroom instruction above indicated. This is the personal examination, by the pupil, of industrial, reformatory and political institutions. It is the so-called "laboratory method" of study, which is frequently employed in graduate courses. The introduction of some of this work into the undergraduate course is made with a full knowledge of the fact that its true place is after and not before a theoretical study of principles. If the method be adopted at too early a point in the course, the

results of it are not likely to realize the promise that the method itself affords.

To give a list of detailed topics that are selected from the limitless range that the course opens, as particular subjects of reading, would be to make a somewhat tedious enumeration. The list, however, would, if given, illustrate the principle on which the selection is made. In Roman History, for example, an amount of time is devoted to the contests of the Plebeians with the Patricians for political rights that greatly exceeds the proportionate space that narrative histories devote to that subject. In Mediæval History a corresponding prominence is given to the development of guilds and of free cities. Subjects of kindred quality, the study of which enables the student to see how modern states and societies came to be what they are, are through the later courses chosen, to the exclusion of much that is of great though secondary value. Indeed, an enumeration of the topics actually selected would show that what is not studied in the four collegiate years furnishes ample materials for a university education.

It is usually said that young women enter the political and economic department at a lower plane of intelligence than do young men. They have not, as a rule, been diligent readers of newspapers. This deficiency has its compensations. The first view of any subject is taken with the keenest zest. Studies of a crude and desultory character may take away the fresh interest of the pupil in the subject, without leaving him in possession of knowledge that in value outweighs the loss. There may be much that it is necessary to unlearn. In studies, moreover, in which partisan feeling is a great obstacle to success, more may be gained than can well be lost by taking up questions *de novo*. It is a universal observation that the actual progress made by young women in political studies is such as to rank them as students on an equality with the real students in colleges for men. In a large number of cases such studies are formally continued after graduation. In all cases the political life of the actual state is and must be a permanent subject of observation and thought; and the test of success in this department of teaching is not the amount of ground that is covered while the pupil is in college, but the direction that is given to the life studies that are to follow.

Northampton, Mass.

ON THE TEACHING OF THE HISTORY OF ART.

BY PROF. HIRAM M. STANLEY, LAKE FOREST UNIVERSITY.

THE objects of an education are training and culture, and in order to attain these ends the pupil should be introduced not only to the master minds in science, philosophy, and literature, but also to the masters in art. The history of art should be a part of the high school as well as of the collegiate course; but it is too often neglected in both. The value of pictures, statues, and noble buildings, for the mental and moral life of the individual is very great, and further, nothing is of more interest to the young. For both these reasons the taste should be cultivated and refined in all pupils who reach the high school grade. The galleries and architectural monuments in our large cities fail of a large part of their educative influence, because the great mass of people have not even an elementary training in art matters, and the bad in works of art is quite as likely to attract them as the good. Moreover, in our democratic age public taste reacts most powerfully on the artists themselves, and art is dragged down to please an untrained public or uneducated *parvenus*. If art is to serve its function in refining public and private life, it must have a place in the required courses of our high schools, academies, and universities.

The great difficulty the teacher meets at the outset is the lack of a suitable textbook. D'Anver's and Turner's are both too advanced for elementary work. De Forest's Short History of Art is merely a compilation, mostly from Lübke, and lacks greatly in unity and clearness. It is over illustrated with mediocre woodcuts, and treats in a confusing way of a multiplicity of minor artists. There is an opening for some one to write a good elementary history of art. Only the great artists should be treated, and these with some fullness. In a course of thirty lessons it is not wise to bring in more than fifty or sixty artists. On the whole it seems best to take up painting, architecture, and sculpture

separately, because as a rule artists come under but one division, and continuity of subject is thus secured. Chronology is but a loose link; unity of subject is generally a far better pedagogic principle. Painting is best treated first, because young minds are most easily interested in this, and illustration is comparatively easy in all large cities. Architecture is second in interest and popular appreciation, and is, of course, familiar, therefore it should precede the study of sculpture which is the most difficult of the arts for the ordinary mind. As Mr. Hamerton remarks, "Even of the cultivated classes not one person in fifty knows anything whatever about sculpture, or can tell first-rate from fifth-rate work when he sees it."

Mr. W. H. Goodyear's History of Art, which has just appeared, is subject to the same criticisms as De Forest's textbook. It is crowded with inferior process engravings, some of them very inferior; and the text, put in the dry dictionary form, touches upon a bewildering multitude of artists. One might perhaps, use Miss Crane's pleasant little lectures on Art and the Formation of Taste as a textbook, at any rate it would serve very well for general reading. So many books on art are lacking in the true artistic spirit that it is refreshing to find one which possesses it in fair measure.

Woodcuts are very unsatisfactory as illustrations of art subjects. A textbook with a dozen good autotypes is preferable to a book with scores of ordinary woodcuts. In illustrating to a class the material should be of such size that it will be plainly visible to the whole class while the teacher points out the characteristics of each artist. It diverts attention to pass around illustrations, but the scholars should examine them after the class. The autotypes of the London Autotype Company, which are much better than ordinary photographs and cost but little more, can be imported free of duty for the use of schools. Good photographs can be obtained from any reputable dealer in Rome or Naples more cheaply than elsewhere. Anton Springer's Bilderbogen, published in Leipzig, is a very full collection of illustrations of the history of art. The cost is about eight dollars for the two most important series. It would be a commendable and profitable enterprise for some publisher to issue an American edition of this work with a translation of the accompanying text. A magic lantern can often be used to advantage. Drawings illustrative of the development

of some one element of art throughout its whole history, as, for example, in architecture the development of the column, are very valuable. In or near a large city, there will be many opportunities for the study of works of art in galleries and public buildings. Students should be encouraged to form collections of photographs and other reproductions, and to buy books on art. It is a good custom for graduating classes to leave behind them some art memorial.

While the object of a brief course in the history of art is primarily to interest the student in art as a whole and to give a good general knowledge of its development, still every student should be led to make some special study, if possible at first hand, of some one artist or work to which he feels peculiarly drawn, and the result should be given in a brief essay. It is a stimulus to the writer and profitable to the class to have some or all of the essays read in the class.

Every school library should possess a Lübke's History of Art and the series of Art Handbooks in eight volumes published in this country by Scribner & Welford. If possible, some or all of the Artist Biography Series should be purchased. The books on art by Mrs. Jameson and Phillip Gilbert Hamerton are popular, readable, and stimulating. The best book in English on the principles of art is Charles Blanc's Grammar of Painting and Engraving as translated by Miss Doggett. Some good art periodical should be taken, as the Magazine of Art, and the art articles in our current magazines should be frequently referred to. Reading about art should, however, always be made subsidiary to the direct study of works of art or of reproductions. These should first be presented to the student, and a direct interest should be excited by personal observation and criticism before any reading is done. The primary object of all teaching of the history of art is not to give the student a knowledge of the life of the artist, nor of the various opinions of critics upon his works; but the main end is to stimulate a genuine and intelligent interest in works of art for their own sake, an interest which will grow and remain with the student throughout life.

"TRUTH gets well if she is run over by a locomotive; Error dies with lockjaw if she scratches her little finger."

DISCIPLINE.

BY JULIA H. MAY.

A wayward scholar, to the school of pain,
Long years ago,
My Father sent me, saying, "Child! remain
Until you know
The lessons that, in future, you will need,
For you are very ignorant, indeed."

At first, with many bitter tears and sighs,
I conned my task;
"What good from all these problems can arise?"
Presumed to ask,
And blindly learned the lesson of the years
Through eyes that were so dim with homesick tears.

Sometimes, unto my Father, I would write,
And sadly say,
I *cannot keep the rules*, Oh, if I might
Go home today!
Or, to a better school, please let me go,
Where lessons will be easier to know.

My Father pitied me, and often sent
Sweet words of cheer,
Or told me what the tangled questions meant.
In terms so clear,
That, for awhile, I loved the school of pain,
And all its discipline seemed wise and plain.

But then, sometimes, the teachers were so stern,
Sometimes so queer,
I did not understand, I could not learn,
I would not hear
The tender words my Father said to me
When He came down His wayward child to see.

Sometimes, I tried the hardest things to do
An easier way
Than that appointed, for, I thought I knew
Better than they,
The teachers in this blessed school of pain;
I always had to do the task again.

At length, I set me down unto my work
With earnest will.
I'll do it as they wish, I will not shirk,
I will be still,
I said, and, though I cannot understand
I will obey the very least command.

And, soon, the discipline no more seemed stern;
The lines grew plain;
I longed, each day, more precious truths to learn,
I felt no pain,
For pain was pleasure, work was sweetest rest,
Because my Father thought that it was best.

At last I learned to love the school of pain,
That very day
My Father came to see His child again,
We went away,
The dear untroubled home-life to begin,
So much the better for the discipline.

January 1st, 1889.

EDITORIAL.

IN a little volume just issued by Trübner, of London, entitled "The Evolution of the Chinese Language," by Joseph Edkins, there is striking confirmation of a view regarding the development of speech recently urged in EDUCATION by Mr. Edmund Noble in a series of articles on "Child Speech, or the Law of Mispronunciation." First pointing out that labials, or sounds formed in the anterior part of the mouth, are the easiest and therefore the earliest to be pronounced and imitated, Mr. Noble went on to show that, as a general rule, the names for "mother" and "father" are in most languages made up of these easier sounds or labials. But the argument went further than this. It is a remarkable fact that not only names for "mother" and "father," but names for "I" and "me," are constituted in most languages (and no doubt originally in all) of the same easy sounds. The conclusion reached by Mr. Noble (and it is supported by evidences in psychology) is that the first word-sounds used by man were the easy word-sounds represented by names for "mother," "father," "I," and "me," and that out of these, as a starting-point, by additions and mutations, all the other sounds of language have arisen.

All this means that speech was first devised by the application of name-sounds to the things in most constant relation with man, the things of less constant relation being named later. Broadly speaking, these most constant relations are the relations of the members of the family to each other. Less broadly, the relations of father, mother, and child are in the modern period the most constant of the family relations. Yet in the earliest period of human development it will be admitted by all students of ethnology that none of the family relations equalled for constancy the relation in which the mother stood to the child. It was thus, according to Mr. Noble, in the family group that, broadly speaking, language was born; while, speaking more narrowly, it was in that most constant relation of all, the relation between mother and child, that the earliest sounds and name-words had their origin.

With this view some of the conclusions reached by Mr. Edkins are in complete harmony. The writer of the new volume says, on page 10, "The first word makers began with labial letters, because these are more open to observation by the eye than the others. When *p*, *b*, *m*, are pronounced the action of the lips is seen. Throat letters . . . would naturally come into current use after labials because the

action . . . . is not visible." These positions are identical with those taken by Mr. Noble. On the same page, Mr. Edkins says, "The interest felt by parents in teaching their children would powerfully aid in developing primitive language." Other extracts from the volume might be given, but enough has been said to show a drift of opinion towards the recognition of family relations as the true centre of the earliest speech formations. Should the views referred to prove to be well founded, little argument will be needed to show the importance of their bearing upon theories of education.

OUR very positive little contemporary "Science" publishes the important fact that "EDUCATION is an ardent defender of things worn out." Our offense seems to be a protest against testing the results of our common school system by absurdities and crudities stored up in such depositories as the little books of Caroline B. Le Row. Whether Mrs. Le Row really puts forth these collections of the blunders of school children as a fair test of the results of common school instruction in the country, we have not learned from herself. But, certainly, nothing in her pages betrays such grotesque absence of common sense as the serious acceptance of "English As She is Spoke," and "The Young Idea," as a test of what is going on in this region of school life, by journals like "Science," and metropolitan sheets, like the New York Tribune. These over-wise men seem to forget that any institution or agency that deals with "all sorts and conditions of people" must, by its very function, be content with gradual and moderate results and submit to a vast residuum of human "slug." Tried by this highly scientific test, what would become of the family, government, the church; even that exalted realm, science; and the true home of infallibility, metropolitan journalism? Viewed from the rear, as the passenger in the train is whirled past the back yards, out-buildings, and pig-stys of a village street. what a melancholy account of itself could the best institution or arrangement of human affairs put forth. But we hold on to all these things, even to the great newspaper, which Dr. Lyman Abbott insists "cannot tell the truth," by virtue of the upper-story success and the gradual conquest of the lower realm of confusion and heartrending failure. But there seems to be more than unwisdom in this popular habit of "nagging" the common school as accountable for every failure in child life. As the New York Tribune solemnly remarks: "The boys and girls who are getting the kind of education here illustrated are charged with the great responsibility of maintaining the Republican form of government." Very true; but a dozen institutions and agencies, to say nothing of the entire environ-

ment of this boy, are charged with the duty of turning him out an average citizen, at twenty-one. Every failure of these tells on his life in school. The only wonder is that our best common schools, with the wisest teachers, are able to offer the present mental and moral resistance to the whelming flood of laziness, stupidity, superstition, vulgarity, and wickedness, amid which the little ones are swimming towards the promised land. As a warning for careless teachers, such books as these may be healthful, although every educated mother or "school-ma'am" could easily gather a small library of the same sort from her own experience. But no absurdity therein is so amazing as the serious impeachment of the common school, on such evidence, by the editors, scientists, and eminent defamers of popular education. Truly, of these, however distinguished, it may be said: —

"Knowledge comes, but wisdom lingers."

THE report comes from the other side that an English cardinal is preparing an article on the American common school system, founded on the book and general investigations of the Hon. Zachary Montgomery; the article to be published simultaneously in England and the United States. Now both Cardinals Newman and Manning are learned, venerable, and otherwise estimable men, who ought to be saved by their friends from the grotesque blunder of writing on American Education on the authority of the champion anti-common school crank of the republic. The Hon. Zachary Montgomery, several years since, put forth an indictment of the American common school as "the poisoned cup of the Republic," in the shape of a volume of statistics, so clumsily arranged that they could not even "lie" as they were instructed to do under the manipulations of their author. The ridiculous volume has been exposed so often that its appearance in Cardinal Manning's library reminds one of Victoria Woodhull and Tennessee Claflin, of bygone day, as present ornaments of polite London society. Montgomery edited a journal consecrated to the office of upsetting "the poisoned cup," till it went under, from the chronic reformer's disability — lack of funds. His reappearance, as an appointer of the present National administration to a responsible office in one of the departments, was the signal for a burst of indignant protest; which he endeavored to allay by an explanatory pamphlet. Nobody knows the weak side of the common school so well as its best teachers and wisest friends. If these who are now engaged in these crusades against the schools would honestly visit and examine them and listen to the opinions of the instructors and the parents of the children, their wisdom might suggest some help out of the difficulties that beset school life in

any form. But, pray, let some good friend of the Cardinal save him from making a spectacle of himself by founding a thesis on the vaticinations of the Hon. Zachary Montgomery concerning the American common school.

FORTY years ago, a green, ambitious country boy, in the usual state of unfitness in which the average graduate of the old-time village academy found himself on facing the higher education, entered as freshman, at Amherst College. Before two years had passed, half the class had "fallen by the way"; overthrown by the severity of the work for students so unprepared and the absurd want of sanitary sense in the college-life arrangements of that day. There is no better exhibit of the wonderful progress of college life in New England during the past generation than the impression upon one's mind which is made by the last catalogue of Amherst College. Contrasted with the past, this beautifully printed volume is a gospel out of a new world; the only resemblance between the new and the old being the ability and fidelity of the teaching force, for which this college has always been distinguished. Handsomely endowed; crowded to its full capacity by students, half the number attracted from states outside Massachusetts; with a scheme of study well struck between the ancient iron-clad course and the go-as-you-please elective curriculum; especially with the admirable sanitary organization which seems to justify the authorities in claiming the highest rank in physical results; the Amherst College of today is one of the most inviting of our American seats of learning. What is here observed is true of almost every New England college, whose history dates from the period referred to. Outside of Harvard and Yale, they have all been endowed, reorganized, and brought into line with the best educational wisdom of the day. This year, they are all prospered in their attendance and are attracting large numbers of desirable students from every portion of the country; especially from the class who believe in honest and intelligent work as a prime qualification of college life.

THE PROMOTION OF PUPILS.

[From the Forth-coming Report of Dr. E. E. White, Superintendent of the Cincinnati Schools.]

FOR reasons fully stated in our last report, the pupils in the Cincinnati Schools are now promoted, not on the results of stated examinations, but on their fidelity and success in school work as estimated and recorded by their teachers at the close of each school month. These estimates are based primarily on the fidelity and success of pupils in their daily work, as remembered by their teachers, but their success in meeting the various oral and written tests which may have been used in the month *for teaching purposes*, are also considered. The rules require these monthly estimates to be made *without the daily marking of pupils and without the use of monthly or other stated examinations for this purpose.* They are simply the judgments of teachers based on their knowledge of the work of pupils during the month.

These monthly estimates are made on the scale of 1 to 10, the number 4 and below denoting very poor work, 5 poor, 6 tolerable, 7 good, 8 very good, 9 excellent, and 10 perfect. In reporting estimates the initial letters are used — *Pr.* denoting perfect work (little used), *E* excellent, $\underline{G}$ very good, *G* good, *T* tolerable, *P* poor, $\underline{P}$ very poor, *F* failure. The standing of pupils is first estimated by teachers as *excellent*, or *good* or *poor*, and these three estimates are sufficient for all practical purposes. The higher and lower estimates (as $\underline{G}$ and *T*) are used when greater accuracy is desired.

The monthly estimates of teachers are recorded in a record book conveniently arranged for the purpose, and they are averaged twice a year — in February and in June; and, when thus averaged, they are approved by the Principal, who makes himself familiar with the progress and proficiency of the pupils under his immediate supervision. To this end, he subjects the pupils in the several grades, as they advance in the course, to such oral and written tests as will indicate their proficiency and be suggestive and otherwise helpful to teachers. Once a month, or once in two months, as may be preferred, these recorded estimates are reported to parents for their information. No estimates are recorded in first-year and second-year grades, and no formal reports of the pupils' standing in these grades are made to parents.

At the close of the year, the pupils are promoted on these recorded estimates, a standing of *good or higher* in each branch entitling a pupil to promotion. In case a pupil stands below good (or 7) in one to three branches he may be promoted, provided that these lower estimates are not all in the daily and more essential branches, and provided further that the pupil's habitual diligence in study and good conduct, considered in connection with other circumstances, give satisfactory evidence that, if promoted, he will be able to do successfully the work in the next higher grade. The "other circumstances" considered include the age and health of the pupil, length of time in grade, prior school advantages, future opportunities, etc., — in a word, *the pupil's true interests*. The record books used for the recording of estimates are so arranged that the pupil's standing for each month, for each half-year, and for the year, can be seen at a glance, and the pupil's fitness for promotion, as shown by the teacher's estimates, be quickly determined. It does not require the making of a general average for all the branches, and no such general average is used in promoting pupils.

In case a parent or guardian is dissatisfied with a pupil's non-promotion, such pupil's proficiency is, on the application of the parent or guardian, determined by a written examination, the results of the same being considered as additional evidence of the pupil's fitness for promotion.

I have thus stated, as concisely and clearly as possible, the plan of promoting pupils which has been substituted for the examination system, so long used in this city. The new plan was adopted by the Board of Education in March 1887, and two annual promotions have been made under it.

What is the result?

The results of the promotions made in June, 1887, were fully stated in the report for that year. A comparison of the teachers' estimates the last half of the year with the results of the two written examinations in the first half showed that the estimates more fairly represented the proficiency of pupils than the examination results, and the results of the written examinations, taken by non-promoted pupils at the close of the year, strikingly confirmed the reliability of the teachers' estimates.

The promotions in June last bear similar testimony. In a single week, twenty-two thousand pupils, including those in the H and G grades, were quietly promoted. There was no examination worry or excitement, and no over-taxing of nervous energy in cramming to make up for lack of application or loss of time, or to satisfy the anxiety of parent or pupil. These were obvious results.

Fewer non-promoted pupils applied for examination than in the previous year, and these with few exceptions, failed to reach the required standing, thus confirming the accuracy of the teachers' estimates. In the A and D grades, whose pupils are promoted directly by the Superintendent, 106 non-promoted pupils, (ninety-six in D grade and ten in A grade) were examined, and of these only five (four in D grade and one in the A) reached a standing of *G* or 7, and these had a fair estimate standing. All the results known warrant the belief, expressed last year, that the pupils in the schools have never been better classified than they are the present year.

In support of this belief we submit the following comparisons: —

1. Of the pupils remaining in the three Intermediate grades (A, B, and C) in June, 1886, over 87 per cent. were promoted on examination, and of those remaining in June, 1888, only 86 per cent. were promoted on the monthly estimates.

2. Of the pupils remaining in the three upper District grades (D, E, and F) in June, 1886, over 91 per cent. were promoted on examination, and of those remaining in June, 1888, only 85 per cent. were promoted on the monthly estimates.

3. Of the pupils remaining in the A grade (8th year) in June, 1886, 81 per cent. were promoted on examination, and of those remaining in June, 1888, 85 per cent. were promoted on the monthly estimates.

4. Of the pupils remaining in D grade (5th year) in June, 1886, 93½ per cent. were promoted on examination, and of those remaining in June, 1888, only 86½ per cent. were promoted on the monthly estimates.

It is thus seen that with one exception (the A grade) a lower per cent. of the pupils have been promoted under the new plan than were promoted under the examination system, and the reasonable presumption is that fewer unqualified pupils have been promoted; and this is sustained by the subsequent progress of the pupils. The per cent. of A grade pupils promoted this year is a little greater than in 1887 on the estimate plan, as well as in 1886 on examination. This result is due in part, at least, to the fact that fewer weak pupils were in the A grade last year, the classification being better.

It is believed that in a well-graded system of schools from 80 to 90 per cent. of the pupils remaining at the close of each year should be prepared for promotion, and the higher the grade the greater should be the per cent. of pupils promoted. It is certainly a mistake to hold any teacher responsible for the promotion of all the pupils who remain in school during the year. There must be from year to year a separation of the weakest pupils from those who are able to advance more rapidly. It is only by such re-classification that the interests of all the pupils can be best subserved. It is a great wrong to strong children to

chain them to weak ones, and oblige them to keep step together through a series of years. It is also wrong to the weak who need to advance less rapidly and to have more help by the way. There is at best a considerable sacrifice of talent and opportunity in a graded school system, and great pains should be taken to make this as small as possible. The mind of moderate power should not be sacrificed by requiring it to reach unattainable results.

But the chief reason for the change in the plan of promoting pupils was to free the instruction of the schools from the narrowing and grooving influence of the examination system, and secure needed improvement in methods of teaching, and in the course of study. In these important directions the change has been attended with most gratifying results.

It has not only secured more attention to those studies and exercises which were neglected under the examination system, the results not being easily measured by written tests, but it has permitted and encouraged wider and more rational teaching. These desirable changes have been specially noticeable in moral training, reading, language, and geography, and in all branches there has been an increasing use of methods that look to right training rather than to the preparation of pupils to meet mechanical and memoriter tests. If there be any teachers in the schools, who are not teaching better, the fact must be due either to lack of interest in improved methods or inability to use them, and there may be a few teachers in this condition.

It is true that the success of the new system depends much on the Principals who have the immediate supervision of the work of the teachers. In the study and adoption of improved methods, the Principal of the school must be the leader. If he be not intelligently and heartily enlisted in the reforms instituted, the progress of the teachers under his direction will be unsatisfactory. The continued use of tests that call for old results, will keep most teachers in the ruts, and a Principal may thus perpetuate in his school some of the hindrances of the examination system.

The use of tests that stimulate and encourage progress is one of the most obvious advantages of the present plan. Written tests are now used *for teaching purposes*, and not to afford a standard for the promotion of pupils. This fact makes it possible to use tests that disclose defects in instruction and suggest improvements, without sacrificing the interests of pupils. The use of such tests is always difficult when the promotion of the pupils in a class depends on the results. It certainly is not right to keep pupils in a grade an extra year because the teacher has failed to teach certain facts which the superintendent would like to see taught *in the future;* and yet the use of examination questions

touching such facts is a most effective means of securing future attention to them. The attempt to prepare questions that will be suggestive to teachers and pupils and, at the same time, be fair and proper tests of the pupil's fitness for promotion, is always difficult, if not impossible. Promotion questions, as a rule, are narrow and technical, and, as evidence of the actual attainments of pupils, misleading. The fact that they are usually within the *minimum* requirements of the course and are gauged to the attainments of the weaker pupils, results in the marking of pupils much too high. The pupils in our schools have reached no such standard of attainment as their examination percentages have indicated. The number of pupils "perfect," or very close to perfection, has been marvellous. The pride of parents and pupils and even of teachers may be flattered by such results, but all have been greatly deceived. One of the most gratifying changes under the estimate plan has been a truer representation of the actual attainments of pupils.

It is doubtless too early to claim for the estimate plan complete success, and it is certainly too early to determine its final influence on school work. The system needs careful and intelligent oversight and direction, and this is true of all school devices — the better the device, the greater intelligence required for its use. A machine can be "run"; a true method must be administered. It is proper to add that the success of the estimate plan in Cincinnati is not conclusive evidence that it will be equally successful elsewhere. The organization and supervision of the Cincinnati schools are well adapted to the administration of the system.

REWARDS FOR MERITORIOUS DISCOVERIES AND INVENTIONS.

[The following circular, just received, is given entire and requires no explanation.]

To the Editor of "EDUCATION," Boston: —

THE Committee on Science and the Arts of the Franklin Institute of the State of Pennsylvania, respectfully requests that you will cause to be made known to the readers of your influential journal, the fact that the Committee is empowered to award, or to recommend the award of, certain medals for meritorious discoveries and inventions, which tend to the progress of the arts and manufactures.

These medals are: —

1. The Elliott Cresson Medal (gold). This medal was founded by the legacy of Elliott Cresson, of Philadelphia, and conveyed to Trustees of the Franklin Institute. By the Act of the Institution, May 17, 1849, the Committee on Science and the Arts was designated and

empowered to award this medal, and the Committee decided to grant it, after proper investigation and report by sub-committee, either for some discovery in the arts and sciences, or for the invention or improvement of some useful machine, or for some new process, or combination of materials in manufactures, or for ingenuity, skill, or perfection in workmanship.

2. The John Scott Legacy Premium and Medal, (twenty dollars and a medal of copper). The John Scott Legacy Premium and Medal was founded in 1816, by John Scott, a merchant of Edinburgh, Scotland, who bequeathed to the city of Philadelphia a considerable sum of money, the interest of which should be devoted to rewarding ingenious men and women who make useful inventions. The premium is not to exceed twenty dollars and the medal is to be of copper, and inscribed "*To the most deserving.*"

The control of the Scott Legacy Premium and Medal (by Act of 1869) was transferred to the Board of Directors of City Trusts, and referred by the Board to its Committee on Minor Trusts, and that committee resolved, that it would receive favorably the name of any person whom the Franklin Institute may from time to time report to the Committee on Minor Trusts, as worthy to receive the Scott Legacy Premium and Medal.

The Franklin Institute, by resolution in 1882, accepted the above-named action of the Committee on Minor Trusts, and referred the duty of making such recommendations to the Committee on Science and the Arts. The Committee determined that the recommendation for such reward shall be made on the favorable report of a sub-committee which shall be appointed to examine the invention or discovery.

The Committee requests your coöperation in facilitating the making of the aforesaid awards for meritorious discoveries and inventions, by bringing the facts herein set forth to the knowledge of your readers.

Upon request therefor, from interested parties, made to the Secretary of the Franklin Institute, full information will be sent respecting the manner of making application for the investigation of inventions and discoveries; furthermore, the Committee on Science and the Arts will receive and give respectful consideration to reports upon discoveries and inventions, which may be sent to it with the view of receiving one or the other of the awards herein-named, and full directions as to the manner and form in which such communications should properly be made, will be sent on application.

By the Committee's order,

WM. H. WAHL, *Secretary.*

The Franklin Institute of the State of Pennsylvania, for the Promotion of the Mechanic Arts.

PHILADELPHIA, Oct. 1, 1888.

FIFTY DOLLAR PRIZE FOR THE BEST ESSAY ON ENGLISH IN SECONDARY SCHOOLS.

THE increased prominence of English in school programs, and the lack of any generally-accepted plan or system of work, have prompted the editor of *The Academy* to offer a special inducement to those who have devoted thought to the teaching of English, and who have definite ideas of the method of such teaching. The essays may be upon the teaching of English literature, methods of grammatical study, composition work or rhetoric, etc., but no weight will be attached to arguments in favor of teaching English. Contestants must confine themselves simply to practical exposition of results sought and of the means of attaining these results in the schoolroom. While literary merit will not be disregarded, the decision of the judges will rest mainly on the practical help afforded to teachers by the article. The competition is open to all persons, without regard to age, sex, color, or previous condition of servitude. The following are the conditions: —

No paper is to exceed in length 5,000 words.

The paper awarded first prize by the committee shall become the property of *The Academy*.

Any papers of special merit, which may receive honorable mention, shall also become the property of *The Academy*.

Papers must be legibly written so as to be published without copying, must be signed with a fictitious name (the real one being enclosed in a sealed envelope), and must be received at the office of *The Academy* on or before April 15, 1889.

Manuscripts not receiving prize or honorable mention, will be returned if stamps are enclosed.

The names of the committee of award will be published.

If further information is desired, address

The Academy, Syracuse, N. Y.

FOREIGN NOTES.

THE BODLEIAN LIBRARY. — In accordance with the permission granted by the Curators of the Bodleian Library in 1885, Mr. Edward B. Nicholson, the librarian, has just issued the first of a yearly series of reports for the information of members of Oxford University and other persons who may be interested in the Bodleian.

Strictly speaking the history of the library begins with its opening by the founder, Sir Thomas Bodley, in 1602. It is, however, the successor of an ancient library of the University, "which existed at least as early as the beginning of the fourteenth century."

In the time of Edward VI. this ancient library fell under the ban of the iconoclasts; its illuminated or rubricated manuscripts were destroyed; the rest of the collection was scattered beyond recovery, and the very seats at which readers had sat were sold. Four years after the final act of destruction, Thomas Bodley entered Magdalen College as an undergraduate, became subsequently a Fellow of Merton College, served his country with distinction as a diplomatist, and returning from his foreign post, gave himself to the work which keeps his "memory green" to the present day.

Among the earliest donors to the library appear the names of William Herbert, Earl of Pembroke, and Archbishop Laud; Oliver Cromwell, Selden and Junius came in their turn; the eighteenth century affords a long line of illustrious contributors, and the present century has witnessed splendid bequests, including the famous Douce collection of manuscripts and printed books, and the oriental manuscripts presented by Sir W. Walker and Mr. J. B. Elliott. These and many more particulars are to be learned from the historical portion of Mr. Nicholson's report.

As regards housing, the library occupies the whole of "the old school's quadrangle," excepting the two top rooms in the tower, which contain the University Archives; all of the Radcliffe building, save a portion of the gallery devoted to the Hope collection of engraved portraits, and the basement of the Sheldoman Library.

By desire of the Curators the library was counted at the end of January, 1885. No pains were spared to secure exactness in this very difficult task, and between countings and estimates the total arrived at was 470,000 volumes, of which more than one-half are in rooms closed to

visitors. The term volume, however, is exceedingly indefinite, being here taken to mean so many pamphlets or works as may be bound between the same covers. "The only real basis of comparison between libraries," observes Mr. Nicholson, "are their shelf-measurements or the number of their distinct title pages, and until one or the other of these estimates has been made the relative size of the Bodleian cannot be precisely determined." Mr. Nicholson is of the opinion that it is exceeded by five only, viz.: the Bibliothèque Nationale at Paris, the British Museum, the Imperial Library at St. Petersburg, and the Royal Libraries at Munich and Berlin.

Prior to 1883 only partial statistics of the annual increase of the library were attainable. In that year a system of accurate counting was begun and in the following year was brought to completeness. The additions are received by gift or exchange, under the copyright act, by new purchases, and by second-hand purchases. In 1887 they numbered 54,700, of which fifty-eight per cent. were received under the copyright act.

The printed books purchased at second-hand are roughly divided by Mr. Nicholson into two classes, viz.: (1) books asked for by readers: (2) other books. In order to satisfy all requests of readers as rapidly as possible, inquiries for books published on the continent have been made for some time past through Messrs. Koehler of Leipzig, all other inquiries of the kind being made through Mr. Quaritch.

The remaining second-hand purchases consist of books bought on account of their subject, and books bought on account of the place or date of their production. Among the latter, books printed in Oxford or in the counties immediately around it are especially prized.

To the librarian the most interesting part of Mr. Nicholson's report is that relating to the scheme and the work of cataloguing. It would be impossible in the limits of this article to do justice to the subject; suffice it to say that the code of cataloguing rules employed is based upon the code of the Library Association of the United Kingdom, which in turn was based on the code of the American Library Association.

A special catalogue of fifteenth century books in which the Bodleian is particularly rich is being prepared by Mr. E. Gordon Duff, whose knowledge of fifteenth century printing is almost unequalled. In June, 1888, this work had reached the letter "J" the number of books entered being 3,104. In the process, all volumes that do not certainly belong to the century specified have been carefully excluded.

The Bodleian Library is especially rich in manuscripts, and in Oriental manuscripts probably surpasses every other European collection.

The cataloguing of this precious division is a work of great labor employing distinguished specialists.

In the matter of musical collections the Oxford Library is second only to the British Museum. Owing to the inadequateness of the staff the mass of musical compositions received each year under the copyright act remained uncatalogued till the end of 1882. Since then, all new accessions of the kind have been regularly catalogued and great progress has been made in bringing up the arrears.

Among especially curious and rare possessions of the library should be mentioned the prints sometimes found inserted in devotional books printed on manuscripts of the fifteenth and early sixteenth century, and a very curious and valuable collection of playing-cards included among the treasures left by Douce to the library. The number of prints, colored and uncolored, so far discovered, is not above nineteen. The librarian has compiled a detailed description of these on cards specially prepared. A first part of the collection of playing-cards has also been very thoroughly catalogued.

Among the remaining topics of interest treated in Mr. Nicholson's report should be mentioned the coin collection, which is the second largest in the empire, and the architectural history of the library. By the original Bodleian statutes which were in force from 1610 to 1856, all lending of manuscripts and printed books was absolutely forbidden. In 1856 the prohibition against lending was omitted from the new Bodleian statute, and loans are now made with the assent of the University Convocation.

EDUCATIONAL NOTES.

The National League formed in France for the promotion of physical training has a prototype in a Prussian society whose purpose it is to foster a taste for physical exercise among the young. Herr von Gossler, the minister of public instruction, has recently expressed his approval of the objects of the society in an official letter.

The permanent committee on German School Reform recently presented a petition to the minister having 22,409 signatures. In his reply the minister enumerated as the chief difficulties to be overcome, the abnormal influx of pupils to the gymnasium, the distribution of scholarships on the basis simply of poverty, and the insufficient attention paid to physical training, especially at the universities.

The Belgian government continues its vehement crusade against non-clerical schools.

The anti-examination movement appears to be gaining strength in England.

A. T. S.

BIBLIOGRAPHY OF CURRENT PERIODICAL LITERATURE UPON EDUCATION.

The following bibliography of current periodical literature includes articles upon education and other subjects calculated to interest teachers. Only articles from periodicals not nominally educational are mentioned. Articles of special importance to teachers will, as a rule, be mentioned in notes.

Abstraction, L', et les idées abstraites (1st article). F. Paulhan. *Revue Philosophique*, January.

Agnosticism, The Future of. Frederic Harrison. *Fortnightly Review*, January.

"American Commonwealth," Mr. Bryce's. Frederic Harrison. *Nineteenth Century*, January.

American Society, Jottings on. Max O'Rell. *The Forum*, January.

Ariosto, the Satires of. E. M. Clerke. *National Review*, January.

Art in England. Frederick Leighton. *Contemporary Review*, January.

Apprentice System, An American. Richard P. Auchmuty. *Century*, January.

Aveugle. Un noveau cas de guérison d'aveugle né. Dunan. *Revue Philosophique*, January.

Brahmin School-Girl, A. Mrs. Kingscote. *Nineteenth Century*, January.

Contains an account of the Mohārani's Girls' School at Mysore.

Buddhas Leben und Lehre. Raphael Koeber. *Sphinx*, December.

Calculating Boys, Some Strange Feats of. R. A. Procter. *Knowledge*, January.

Cambridge Apostles of 1830, The. Julia Wedgewood. *Contemporary Review*, January.

Canada. Is Union with Canada Desirable? J. S. Morrill. *The Forum*, January.

Cannibalism, the Ethics of. H. H. Johnston. *Fortnightly Review*, January.

Capital, the Fundamental Idea of. Simon N. Patten. *Quarterly Journal of Economics*, January.

Chinese Exclusion Bill, The. Henry L. Dawes. *The Forum*, January.

Chinese. The Chinese in the United States. Wong Chin Foo. *Chautauquan*, January.

Confederacy, The West Point of the. John S. Wise. *Century*, January.

Controversy, the Ethics of. George P. Fisher. *Scribner's*, January.

A valuable article with interesting illustrations from literature.

Darwin's Arguments Against Christianity and against Religion. Prof. B. B. Warfield. *Homiletic Review*, January.

Degeneracy, Town-Life as a Cause of. G. B. Barron. *Popular Science Monthly*, January.

Reprinted from the *Lancet*.

Denkfehler, Ueber allgemeire. Sigmund Exner. *Deutsche Rundschau*, January.

Devotional Reading. Frederic Palmer. *Andover Review*, January.

Doctrine, the History of a. Prof. S. P. Langley. (Concluded.) *Popular Science Monthly*, January.

Ecole des hautes études, L'. Michel Bréal. *Revue Bleue*, 22 December.

Educate the Hand. T. L. Flood. *Chautauquan*, January.

Education, the Athletic Problem in. N. S. Shaler. *Atlantic Monthly*, January.

Professor Shaler considers the evils and the advantages of athletic sports; and, from his experience at Harvard, he reports a great gain physically and morally since the advent of athletic discipline.

Elementary School Life, Studies of. I. H. J. Barker. *Longman's*, January.

English, Colloquial. Prof. A. S. Hill. *Harper's*, January.

A valuable article.

Enseignement du droit international privé, L'. A. B. *Revue Bleue*, 5 January.

Erhaltung der Energie, Das Princip der. M. Planck. *Philosophische Monatshefte*. Heft 3 u. 4.

Explosives. The Effect of Explo-

sives on Civilization. Charles E. Munroe. *Chautauquan*, January.

Factory Life, Studies in: The American and the Mill. Lillie B. Chace Wyman. *Atlantic Monthly*, January.

French Academy, A Reception at the. *National Review*, January.

Geometry, Inventional. Edward R. Shaw. *Popular Science Monthly*, January.

Gold, Appreciation of. F. Y. Edgeworth. *Quarterly Journal of Economics*, January.

Greater Half of the Continent, The. Erastus Winan. *North American Review*, January.

Green of Oxford, Professor. The "Doctor Grey" of "Robert Elsmere." Noah Porter. *Yale Review*, January.

Guiding-Needle, The, on an Iron Ship. G. A. Lyons. *Popular Science Monthly*, January.

Hamilton, Alexander. Coleman E. Bishop. *Chautauquan*, January.

Health Matters: The Germ Theory in Consumption, etc. *Science*, Jan. 4. Contains valuable hygienic suggestions.

Herbert compared with the English Psychologists, and with Beneke. G. F. Stout. *Mind*, January.

Homerische Frage, Zur. Louis Erhardt. *Zeitschrift für Völkerpsychologie*, Heft 1.

Hospitals. I. Susan Hayes Ward. *Chautauquan*, January.

House of Commons, Chaos in the. G. Osborne Morgan. *Contemporary Review*, January.

House-Drainage from Various Points of View. John S. Billings, M. D., U. S. A. *Popular Science Monthly*, January.

Howells' Novels, The Moral Purpose in. Anna Laurens Dawes. *Andover Review*, January.

Hugo, Victor. Toute la Lyre. I. A. C. Swinburne. *Fortnightly Review*, January.

Hypocrisie, Etudes morales sur l'. Francisque Bouillier. *Revue Bleue*, 22 December.

Hypnotisme. Les Suggestions hypnotiques au point de vue médico-légal, par M. Liégeois. Dr. E. Brissaud. *Nouvelle Revue*, January.

Hypnotismus, Fortschritte des. 4. Albert von Notzing. *Sphinx*, December.

Indians of the United States, The, II. J. B. Harrison. *Chautauquan*. January.

Invalid's World, The. The Doctor, the Nurse, the Visitor. A. B. Ward. *Scribner's*, January.

Isolation, or Survival of the Unfittest. Duke of Argyll. *Nineteenth Century*, January.

Italian Masters, Old. W. J. Stillman. *Century*, January.

Language, The Place of the Study of, in a Curriculum of Education. M. Putnam Jacobi. *American Journal of Psychology*, November.

The writer considers the subject from the standpoint of cerebral physiology.

Libre arbitre, Le. Lévy-Bruhl. *Revue Bleue*, 29 December.

Lincoln, Abraham. The Announcement of Emancipation. J. G. Nicolay, John Hay. *Century*, January.

Lying, the Decay of. A Dialogue. Oscar Wilde. *Nineteenth Century*, January.

Maine de Biron, der französische Kant. E. König. *Philosophische Monatshefte*, Heft 3 u. 4.

Manual Training, An Authoritative Definition of. *Science*, Jan. 4.

An abstract of the report of the special committee on manual training at the semi-annual meeting of the New Jersey Council of Education, Dec. 26, 1888. Finding a broader definition necessary than that embracing merely exercises in the use of tools and instruction in drawing, the Council define manual training as "instruction in thought-expression by other means than verbal language and gesture."

Melkenden Götter bei den Indogermanen, Die. W. Schwartz. *Zeitschrift für Völkerpsychologie*, Heft 1.

Memory, Historically and Experimentally Considered. I. W. H. Burnham. *American Journal of Psychology*, November.

An historical survey of the conceptions of memory from the early Greeks to Kant. So far as we know it is the only historical sketch in English covering this ground.

Mental Science: Negative Suggestions, etc. *Science*, Jan. 18.

Microsmus, The. William Tucker. *Universalist Quarterly*, January.

Morality. How shall we Teach Morality? Thomas McMillan. *Catholic World*, February.

Morality, The Evolution of. Prof. J. Seth. *Mind*, January.

Music and Christian Education. Edward S. Steele. *Bibliotheca Sacra*, January.

Necessary Truth, On Some Kinds of. (I.) L. Stephen. *Mind*, January.

O'Connell, Daniel. W. E. Gladstone. *Nineteenth Century*, January.

Odd Sticks and certain Reflections concerning them. Thomas Bailey Aldrich. *Scribner's*, January.

Optimism, The Scientific Bases of. W. H. Mallock. *Fortnightly Review*, January.

Pen, Pencil, and Poison: A Study. Oscar Wilde. *Fortnightly Review*, January.

Personal Equation. E. C. Sanford. *American Journal of Psychology*, November.

Philosophie und Wissenschaft der Vorsokratiker, Zur. P. Natorp. *Philosophische Monatshefte*, Heft 3 u. 4.

"Philosophical Criticism," Riehl on. Prof. R. Adamson. *Mind*, January.

Philosophie. Introduction a la Science Philosophique. IV. Rapports de la Philosophie et de la Théologie. Paul Janet. *Revue Philosophique*, January.

Philanthropist, A Practical and his Work. Doctor Knight. *Macmillan's Magazine*, January.

An account of Jean Baptist André Godin.

Physiologie. L' évolution du système nerveux. H. Beaunis. *Revue Scientifique*, Dec. 15 and Jan. 5.

Poetry. The Religious Element in Modern English Poetry. Before Tennyson. John A. Bellows. *Unitarian Review*, January.

Politics, A Difficult Problem in. Frank Gaylord Cook. *Atlantic Monthly*, January.

The problem referred to is that of obtaining uniformity of legislation among the different states.

Print, Getting into. James Payn. *The Forum*, January.

Presidential Candidates, Defeated. James Parton. *The Forum*, January.

Psychologie. Cerveau et Sociabilité. Th. Meynert. *Revue Scientifique*, 24 November.

Psychologie der Komik. IV. Th. Lipps. *Philosophische Monatshefte*, Heft 3 u. 4.

Psychologie. Le génie et la folie. Charles Richet. *Revue Scientifique*, 22 December.

This article is the preface of the French translation of Lombroso's recent book *l'Homme de génie*.

Public Schools. Are Our Public Schools Godless? Rev. H. D. Jenkins. *Presbyterian Review*, January.

Rabelais, les idées de, sur l' éducation. Paul Stapfer. *Bibliothèque Universelle*, January.

Railroad Business under the Interstate Commerce Act. Arthur T. Hadley. *Quarterly Journal of Economics*, January.

Railway Management. E. P. Alexander. *Scribner's*, January.

Ramabai Association. J. W. Andrews. *Lend a Hand Monthly*, January.

Rede, Die. Karl Schultz. *Zeitschrift für Völkerpsychologie*, Heft 1.

Reform, The Next National. Allen Thorndike Rice. *North American Review*, January.

Religion, Public Instruction in. Prof. Arthur Richmond Marsh. *Andover Review*, January.

Restriction or Prohibition? Henry Stockbridge. *North American Review*, January.

Robert dem Teufel, zur Legende von. Karl Borinski. *Zeitschrift für Völkerpsychologie*, Heft 1.

Robert Elsmere, False Philosophy in. James McCosh. *Our Day*, January.

Robert Elsmere's Mental Struggles. Rev. Edward Everett Hale, Marion Harland, Rev. Joseph Cook, Julia Ward Howe, W. E. Gladstone. *North American Review*, January.

Robert Elsmere's Self-Contradictions. Joseph Cook. *Our Day*, January.

Schoolroom as a Factor in Disease, The. *Science*, Jan. 11.

An abstract of a paper by Dr. J. A. Larrabee.

Science and its Accusers. W. D. Le Sueur. *Popular Science Monthly*, January.

Scientific Charity, the Origin of, in Hamburg. Rev. J. H. Crooker. *Lend a Hand*, January.

Sciences, Enseignement des. Les deux Universités de Prague. P. Loye. *Revue Scientifique*, Nov. 24.

Sciences, Enseignement des. Les nouvelles galeries du Muséum. Félix Hément. *Revue Scientifique*, 5 January.

Shakespeare's Religion and Politics. Goldwin Smith. *Macmillan's*, January.

Southern Life and Affairs, Northern Estimates of. Armory D. Mayo. *Unitarian Review*, January.

Stage and Society, The. Mary Anderson. *North American Review*, January.

Statistics, an Easy Lesson in. Edward Atkinson. *The Forum*, January.

Speculation, The Ethics of. George H. Hubbard. *Yale Review*, January.

Spirit Perception. An Essay in Christian Psychology. Henry E. Robbins. *Baptist Quarterly Review*, January.

Telegraph, Gauss and the Electric. *Popular Science Monthly*, January.

Temperance Laws in the States and Territories. H. W. Blair, *Chautauquan*, January.

"Thousand more Mouths every Day," A. Earl of Meath. *Nineteenth Century*, January.

Tolstoi and Matthew Arnold. Frances Hovey Stoddard. *Congregational Review*, January.

Tolstoi. I. William C. Wilkinson. *Homiletic Review*, January.

Treasury, A Raid upon the. Leonard Woolsey Bacon. *The Forum*, January.

Trusts, According to Official Investigations. E. Benj. Andrews. *Quarterly Journal of Economics*, January.

University, The Need of Another. Andrew D. White. *The Forum*, January.

Vaccination, Compulsory. J. Allanson Picton. *Contemporary Review*, January.

Volunté. Réponse de M. W. James aux remarques de M. Renouvier sur sa théorie de la volonté. *Critique Philosophique*, December.

To this letter from Professor James are appended remarks by Renouvier and a French translation of passages from Lotze's *Medicinische Psychologie*.

War. General Wolseley. *Fortnightly Review*, January.

War, Unfinished Work of the. George B. Cowlain. *The Forum*, January.

Washington's Great Campaign of 1776. John Fiske. *Atlantic Monthly*. January.

West. Is the West Secularized? Joseph T. Duryea. *Andover Review*, January.

Women, French Traits. W. C. Brownell. *Scribner's*, January.

Women, The Higher Education of. Lady Magnus. *National Review*, January.

"The mistake of this 'higher education' seems to us to lie in the elaborate provision which it makes for 'training' its votaries to all sorts of new and overstocked modes of 'earning their living,' to the utter neglect of a certain old one where the demand must be unfailing, even if, owing to circumstances, it be occasionally intermittent. Instruction for our girls, instruction *per se*, and instruction *per* salary, is in the air, but education and education for marriage seems to have gone completely out of fashion."

Working Girls, Clubs for. Maude Stanley. *Nineteenth Century*, January.

Zola. Mrs. Emily Crawford. *Contemporary Review*, January.

AMONG THE BOOKS.

MARVELS OF THE NEW WEST. Six Books in one Volume. By William M. Thayer. 350 engravings and maps. Norwich, Conn.: The Henry Bill Publishing Co. Sold only by subscription. Pp. 715. Boston publishing office 79 Milk street. 1888.

This is one of the most delightful books for winter evenings imaginable. It is graphic, life like, interesting. By reading it and studying its beautiful illustrations one can get a clearer, more graphic, and more accurate idea of the great marvels of our country than fifty years ago would have been possible concerning any country without years of travel. The book is comprised of: 1. Marvels of Nature. 2. Marvels of Race. 3. Marvels of Enterprise. 4. Marvels of Mining. 5. Marvels of Stock Raising. 6. Marvels of Agriculture. It groups together more information of importance concerning the western half of our country than can elsewhere be found in one volume. The Rocky Mountain stories told in this volume surpass anything ever related by Munchausen or in the Arabian Nights, yet the stories are all true, and the half has not been told. The writer has evidently been there and knows of what he affirms.

PRIMARY WRITING By Mara L. Pratt. Boston: Eastern Educational Bureau. Price 15 cents.

This is an ingenious method of teaching the elements of penmanship to young children. It consists of nine sections or lessons. The first one is introductory and unfolds the fundamental principle upon which the lessons are planned. The method is based upon a careful description of what is to be done, which is given in such a way as to create an interest — indeed, an enthusiasm on the part of the children in the work before them. The first device employed is a set of cards put into the hands of the children with parallel lines slanted at the correct writing angle. Over them thin paper is to be placed upon which the children will practise till they have acquired the habit of making lines upon that particular angle.

The next device is to give the children three straight splints, or tooth picks, with which they can make ten or twelve "print letters." Then with an "under curve," an "over curve," and a "slant," the basis of all the letters can be made.

After this the lessons unfold by a very simple process rules for the making of the entire alphabet.

The plan is original, unique, natural, and philosophical. Many primary teachers will find this little device extremely useful saving them much time and trouble. Sent to any address by mail, prepaid, on receipt of the price, 15 cents.

A TEXTBOOK OF GENERAL ASTRONOMY for Colleges and Scientific Schools. By Charles A. Young, Ph. D., LL. D., Professor in Princeton College. Boston: Ginn & Co. Pp. 551. Mailing price $2.50. 1888.

The publication of this book will, in many directions, mark a new era in the study of Astronomy. The book is thoroughly sensible, philosophical, scholarly. Its chapter on astronomical instruments is the best yet found in any book. Its theory of the sun gives us all that science has yet unfolded. The moon's path in space is very clearly explained and illustrated. It is questionable whether the author, or any one else, has yet got down to bed rock upon the subject of tides. The treatment of the planets and of comets is admirable. The discussion of meteors and shooting stars is both thorough and scientific. But it is left for the chapters on *stars* to furnish the greatest expression of thought and the broadest generalizations of science. The result arrived at is that the present system of stars and worlds is not the eternal one. The author's conclusion is as follows: "If we carry our imagination backwards we reach at last a 'beginning of things' which has no intelligible antecedent: if forwards the end of things is stagnation. That by some process or other this end of things will result in a 'new heavens and a new earth,' we can hardly doubt but science has as yet no word of explanation."

We have received from E. L. Kellogg & Co., of New York and Chicago.

(1) THE TEACHERS' PSYCHOLOGY. By A. S. Welch, Professor of Psychology, Iowa Agricultural College. Cloth. Pp. 300. $1.25.

This work is a treatise on the Intellectual Faculties, the order of Growth and the Corresponding Series of Studies by which they are Educated. Professor Welch has undertaken to write upon a great subject, and he has here given us a book that deals with mind unfolding, as exhibited in the schoolroom. He has come to his work well prepared by long study of the subject and the result is a clear and concise treatise. A valuable part of the book is its application to practical education.

(2) SCHOOL DEVICES. By Edward R. Shaw and Webb Donnell. Pp. 278. Price $1.25.

This is a new edition of the popular and useful book written by Principal Shaw, of the Yonkers High School, and Principal Donnell, of Maine.

It is a collection of plans and methods to bring new life and freshness into the schoolroom. This new edition is increased in size by the addition of 72 pages of entirely new material.

(3) AN INTRODUCTION TO THE HISTORY OF EDUCATIONAL THEORIES. By Oscar Browning, M. A.

This little volume is No. 8 of the Reading Circle Library. This is an enlarged edition, the new features of which are: 1. An Analysis of Each Chapter. 2. A Full Index of Subjects. 3. A Valuation of Froebel. 4. The American Common School.

THE TREE OF MYTHOLOGY, Its Growth and Fruitage. By Charles DeB. Mills. Syracuse, N. Y.: C. W. Bardeen, Publisher. 1889. Pp. 288. Large octavo. Price $3.00 net. Edition limited to 500 copies.

Here is a new and fresh treatment of an old theme. The book aims to ascertain the origin and the nature of the growth of myth. It concerns itself with the two questions: what myth was formerly and what it has become. It reveals the fact that the author has explored vast fields and gleaned thought from every region. He discusses the genesis of nursery tales, saws of folklore, proverbs, shadow and signification, the didactic and the ethical, and symbolism. The "moon made of green cheese," the author assigns to a Scotch origin; to "sow wild oats" comes from Jutland. Both subject matter and style are of great interest. It is only when the author touches the idea of God that he wanders to the extreme edge of the mythical or mystic field.

ALLEN AND GREENOUGH'S LATIN GRAMMAR. Revised and enlarged by James B. Greenough, assisted by George L. Kittredge. Boston: Ginn & Co. Pp. 488. Introduction price $1.20. 1889.

The object of this new edition is to give the latest results of special study in this department, and to make whatever improvements have been suggested by ten years' use. The aim has been to make the grammar as perfect as such a book possibly can be. The method of the revision has kept the needs of the classroom always in view. The language of the book has been subjected to the closest scrutiny throughout, and an effort has been made to make the rules intelligible and quotable, without conceding anything to mechanical ways of presenting grammar.

A COLLECTION OF IMPORTANT ENGLISH STATUTES, Showing the Principal Changes in the Law of Property; together with some other Enactments of Common Reference. Third Edition. Cambridge: Waterman and Amee. 1888.

This book contains, in compact form, the most important of those English statutes which, passed before the establishment of the colonies, form to-day part of our law. To these are added such subsequent acts of parliament as have had, through their direct or indirect adoption, the greatest influence on the case law of this country. The greater part of these statutes, or portions of statutes, bear on the subject of the holding and transfer of property; the remainder will be found to be some of the more important of those which relate to the subjects of crimes, evidence, and procedure.

MORAL TRAINING IN PUBLIC SCHOOLS. Fourth Annual Report of the Committee on Educational Progress. Presented to the Massachusetts Teachers' Association at Boston, December 1, 1888.

This report was made by Ray Greene Huling, O. B. Bruce, and A. P. Stone. It is a very careful, intelligent, and valuable report. It describes "the possibilities of school life," "the principles of moral training," "the actual situation" as it relates to the different grades of schools. This situation was determined by the committee largely by correspondence with teachers, school superintendents, and others, and the conclusion arrived at is, in brief, that the schools are doing good service to the community in respect to moral training. This report is cordially commended to the careful attention of all interested in this important subject.

SELECTIONS ILLUSTRATING ECONOMIC HISTORY Since the Seven Years War. Compiled by Benjamin Rand, Ph. D. Boston: A. A. Waterman & Co. 1889.

These selections have been made for use as a textbook of required reading to accompany a course of lectures on economic history given at Harvard College. This book has already been adopted for a similar purpose as at Harvard by other leading American Universities. Although the compilation was prepared with special reference to the needs of students in courses of economic study, yet the nature and scope of the selections render them of value to any person who may desire to obtain a knowledge of some of the most important events and influences in modern economic history.

SYSTEMS OF EDUCATION. A History and Criticism of the Principles, Methods, Organization, and Moral Discipline Advocated by Eminent Educationists. By John Gill, Professor of Education, Normal College, Cheltenham, England. Boston: D. C. Heath & Co.

The notes to this, the fourteenth edition, have been revised throughout, and a few passages in the former editions have been explained. The author has had rare opportunity for studying this important subject and has made the most of his opportunities. This work is the result of that study. The book has been published at the request of the author's former pupils. The author is broad and liberal in his treatment of the various subjects discussed, and the wide-awake teacher will find in the work food for much thought.

FOOT-PRINTS OF TRAVEL; or, Journeyings in Many Lands. By Maturin M. Ballou. Boston: Ginn & Co. $1.10. 1889.

In this very readable book of travel we have the narrative of a practised and successful writer who has been in almost every part of the globe, and describes only what he has visited. His reputation as the author of "Due West," "Due South," "Under the Southern Cross," etc. is sufficient to make this new work at once popular. "Foot-Prints of Travel" is not only an interesting book for general reading, but is a valuable book for school purposes. It furnishes excellent reading matter, depicts foreign countries and famous cities, describing land and ocean travel in such a way as to fix geographical and other facts upon the mind of the reader. We heartily commend it to old and young.

THE DIME QUESTION BOOK IN BOOKKEEPING. By C. W. Bardeen. Syracuse, N. Y. 1888.

In this little book for ten cents, sixty-three important topics are briefly treated. If you are teaching this subject, send for a copy.

MAGAZINES RECEIVED.

A few articles on educational subjects, or subjects especially interesting or important to educators, have been selected from our leading magazines as likely to be of special interest to our readers: —

The Andover Review for January, 1889, contains the first of a number of articles by prominent educators on the subject of "Public Instruction in Religion." The article in this number is by Prof. Arthur Richmond Marsh. — The chapters in the History of Lincoln in the February *Century* will be found to be of peculiar interest. They will include a graphic description of the events leading up to the removal of McClellan; financial matters; Seward and Chase. — An instructive and interesting account of "Fire-building," as taught in the Boston Public Schools, is given by Mrs. Sallie Joy White, in the January *Wide Awake*. — *The North American Review* for January gives "Robert Elsmere's Mental Struggles," by the following noted writers: Rev. Edward Everett Hale, Marion Harland, Rev. Joseph Cook, Julia Ward Howe, the Right Honorable W. E. Gladstone. — The February *Catholic World* has an article on methods of instruction for the blind, by Mr. John A. Mooney. — The opening article in the January *Academy* is "Moral Training in the Public Schools. This is a valuable report made to the Massachusetts Teachers' Association. — The former editors of the *Lend a Hand* will be assisted, in the future, by the directors of the Massachusetts Society for the Promotion of Good Citizenship. — A well-written and finely illustrated article on "What is known about Shakespeare," is to be found in the February *Frank Leslie's Sunday Magazine*. — The opening article in the January *Northwest* is entitled "A Journey in Eastern Montana." — *The Collegian*, a monthly magazine devoted to the interests of Undergraduates, is a new periodical published under the auspices of the New England Intercollegiate Press Association and edited by Samuel Abbott. The opening article of the first number is entitled "Harvard Reminiscences of Fifty Years Ago," by E. E. Hale. — Thomas Carlyle is the subject of *Literature* for January 12. — Noah Porter has contributed to the January *New Englander and Yale Review* an article entitled "The Late Professor Green, of Oxford, the "Doctor Grey," of "Robert Elsmere." — "The Lion's Share" is the title of the complete story in *Belford's Magazine* for January. — *Shoppell's Modern Houses* for the beginning of 1889, is a particularly interesting number. — *Blackwood's Edinburgh Magazine* is published by The Leonard Scott Publishing Co., Philadelphia. — *The Overland Monthly* for February, published in San Francisco, is a very interesting number. — *Donahoe's Magazine* is a journal devoted to the Irish race at home and abroad. It is vigorous and entertaining. — *The Quiver* is an illustrated magazine for Sunday and general reading. It is full of good stories. — *The Quarterly Journal of Economics* has four valuable articles. Published by George H. Ellis, Boston. — *Vick's Floral Guide*, for 1889 is more attractive than ever before. The work is profusely illustrated, and the descriptions of the various plants are full and clear. — *Revue Pedagogique*: Paris, Librairie Ch. Delagrave. The best of the French educational journals.

PAMPHLETS RECEIVED.

Advanced sheets of Biennial Report of the Superintendent of Public Instruction. Statistics for 1887 and 1888. State of Iowa. Henry Sabin, Superintendent. — Annual Report of the School Committee of the City of Newton. 1887. Vol. XLVIII. — Annual Report of the School Committee and Superintendent of Schools, with Subordinate Reports. Courses of Study, etc. Portland, Me. 1887-1888. — Annual Report of Public Schools of Biddeford, Me. 1887-1888. — Annual Report of the School Committee of the City of Somerville, Mass. 1887. — Annual Report of the School Committee of Dover, N. H. 1887. — Annual Report of the School Committee, together with the Report of the Head Master of the Rogers High School, and the Twenty-third Annual Report of the Superintendent of Public Schools. 1887-1888. — School Report of the town of Pittsfield for the school year 1887-1888. — Annual Report of Superintendent of the City Schools of Oskaloosa, Iowa. 1888. — Sixth Biennial Report of the Board of Regents and Faculty of the State Normal School, Emporia, Kansas. 1887-1888.